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SUFFOLK UNIVERSITY

VALUES AND PUBLIC SPEAKING:
EXAMINING THE EFFICACY OF A BRIEF ACCEPTANCE-BASED
INTERVENTION FOR PUBLIC SPEAKING ANXIETY

A DISSERTATION SUBMITTED TO THE FACULTY OF
THE COLLEGE OF ARTS AND SCIENCES
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

DEPARTMENT OF PSYCHOLOGY

AVIVA M. KATZ

BOSTON, MASSACHUSETTS

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My graduate career has been filled with a myriad of rewarding and challenging experiences, all of which have facilitated my growth into the clinical psychologist I never knew I could be. Most importantly, I am forever thankful for my unique graduate mentor, Sue Orsillo. Your work ethic, scientific curiosity, and dedication to your students make working with you an honor. These qualities combined with your humanity and warmth make you an inspiration. I am proud to carry with me all that I've learned from you as I embark on the next part of my professional journey. I'm also grateful to my committee members. Lisa Coyne, thank you for your enthusiasm for the study; it enhanced my own as I began this endeavor. Lance Swenson, you have been an incredible support, balancing much-needed laughter with genuine encouragement and productivity-boosting writing schedules. My friends, too many fantastic people to name here, have provided endless forms of love and support throughout my graduate school years. I'm grateful to my labbies and classmates, especially Johnny Lee, Stephanie Czech, Julie Yeterian, and Estie Reidler, for their input, encouragement, patience, and thoughtfulness. Naomi, your genuine curiosity and enthusiastic spirit helped me forge on and find fun in the process. Our daily lives may look very different, but our sister-ness transcends it all. Dad, "talking shop" has become an experience I am privileged to share with you. Your belief in me from the very beginning has been unwavering, and I appreciate that more than you know. Mom, I only hope that I can help the world continue to benefit from your generosity of spirit, perseverance, and easy smile. You were the personification of a values-driven life and I am deeply thankful that your voice will always influence me.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	iii
LIST OF TABLES	v
LIST OF FIGURES	vi
ABSTRACT	vii
INTRODUCTION.....	1
COGNITIVE BEHAVIORAL MODEL OF, AND APPROACH TO TREATING, SAD	3
<i>COGNITIVE BEHAVIORAL MODEL.....</i>	3
<i>COGNITIVE BEHAVIORAL THERAPY.....</i>	4
<i>LIMITATIONS OF THE COGNITIVE BEHAVIORAL MODEL OF SAD.....</i>	5
<i>SUMMARY.....</i>	6
ACCEPTANCE-BASED MODEL OF, AND APPROACH TO TREATING, SAD	6
<i>ACCEPTANCE-BASED BEHAVIORAL MODEL</i>	6
<i>ACCEPTANCE-BASED BEHAVIORAL THERAPY.....</i>	7
<i>ACCEPTANCE-BASED APPROACHES TO SAD</i>	10
<i>SUMMARY.....</i>	12
OVERVIEW OF THE PRESENT STUDY	13
HYPOTHESES.....	14
METHOD	16
PARTICIPANTS	16
MEASURES	18
PROCEDURE	22
RESULTS	24
PRELIMINARY ANALYSES AND DATA ANALYTIC PLAN.....	24
HYPOTHESIS TESTING	25
DISCUSSION	28
IMPLICATIONS	31
LIMITATIONS	32
FUTURE DIRECTIONS	34
REFERENCES.....	36
APPENDIX A	53
APPENDIX B	64
APPENDIX C	66
APPENDIX D	78
APPENDIX E	83
APPENDIX F	96
APPENDIX G.....	107
APPENDIX H.....	109
APPENDIX I	110
APPENDIX J.....	113
APPENDIX K.....	117

LIST OF TABLES

TABLE 1. <i>Means, Standard Deviations, and Ranges by Completion Status (N = 65)...</i>	113
TABLE 2. <i>Means, Standard Deviations, and Ranges by Anxiety (N = 117)</i>	114
TABLE 3. <i>Correlations Among Study Variables at Time 1 (N = 117)</i>	115
TABLE 4. <i>Regression Analysis Predicting Impact of Public Speaking Anxiety and Academic Values on Willingness</i>	116

LIST OF FIGURES

FIGURE 1. <i>CONSORT Diagram</i>	117
FIGURE 2. <i>Response to Exposure Question by Condition (N = 27)</i>	118
FIGURE 3. <i>Changes in Willingness By Condition (N =27)</i>	119
FIGURE 4. <i>Changes in Public Speaking Behaviors By Condition (N = 27)</i>	120

ABSTRACT

Social anxiety Disorder (SAD), including public speaking (the most frequently endorsed social fear; Ruscio, Brown, Sareen, Stein, & Kessler, 2008), is prevalent, chronic, and can be vastly debilitating. Cognitive behavioral therapies (CBTs) have garnered substantial empirical support for the treatment of SAD (e.g., Norton & Price, 2007). Although effective in reducing social anxiety, they are not sufficient, as a significant proportion of patients, as many as 40-50%, do not respond to treatment (e.g., Hofmann & Bogels, 2006). This insufficiency may result from shortcomings in the underlying model of SAD. Specifically, CB models fail to account for the role experiential avoidance and values inaction may play in social anxiety related distress. To date, CBT for SAD has also been characterized by high drop-out rates (e.g., Davidson et al., 2004), which could in part reflect the absence of a client-centered rationale for treatment. Treatment for social anxiety might be improved with the integration of strategies aimed at increasing acceptance and engagement in valued action (i.e., Acceptance-based Behavioral Therapies; ABBTs). Clients may be more willing to stay engaged in treatment, if the rationale is focused on facilitating action in the domains of functioning personally valued by the client. Preliminary evidence for ABBTs exists (Block & Wulfert, 2000; Dalrymple & Herbert, 2007; England et al., 2012; Kocovski, Fleming, & Rector, 2009; Ossman, Wilson, Storaasli, & McNeill, 2006), although the specific contribution of values articulation is unknown.

The current study had two goals: (1) to examine the relationships among academic values, experiential avoidance, public speaking, and willingness to engage in anxiety-provoking academic activities and (2) to explore the efficacy of a brief values

intervention compared to a CBT and control condition in increasing willingness to engage in anxiety-provoking academic activities among students with public speaking anxiety.

Findings from a sample of 117 undergraduates demonstrated that public speaking anxiety was negatively associated with a willingness to engage in academic activities such as asking and answering questions in class ($r = -.44, p < .01$). However the degree to which participants endorsed valuing academics predicted their willingness to engage in them over and above the effects of anxiety (explaining an additional 20.5% of the variance in willingness).

In a sample of 27 students with public speaking anxiety, students experienced an increase in willingness to engage in *anxiety provoking classroom activities* in both the values and the cognitive restructuring conditions (although the values condition demonstrated a moderate to large effect while the cognitive condition exhibited a small effect). Moreover, a significant increase in engagement in valued public speaking activities from baseline to 10 day follow-up was found in the values condition, with a large effect. Comparatively, a non-significant increase was observed in the cognitive condition (with a small effect), while no change was found in the neutral condition. Thus, overall, findings provide support for an acceptance-based model of SAD and suggest that values may play an important role in treatment refinement.

CHAPTER ONE

INTRODUCTION

Social anxiety disorder (SAD) is characterized by marked fear or anxiety in one or more social situations, in which an individual is exposed to scrutiny by others (American Psychiatric Association [APA], 2013). Examples include social interactions (e.g., conversing with others, meeting new people) and performing in front of others (e.g., public speaking). It is one of the most common anxiety disorders in clinical samples (affecting approximately fifteen million adults), and the fourth most common psychiatric disorder in epidemiological samples (Kessler, Chiu, Demler, & Walters, 2005). Data from the National Comorbidity Survey Replication (NCS-R) indicate that public speaking and speaking up in a meeting or class are the most frequently endorsed social fears, reported by approximately 20% of the general population (Ruscio, Brown, Sareen, Stein, & Kessler, 2008) and approximately 70% of those who meet criteria for SAD (Knappe et al., 2011). SAD may be particularly prevalent in college student populations (Stewart & Mandrusiak, 2007); 49% of a treatment seeking sample at a college counseling center and 42% of the nonclinical sample had clinically significant scores on an SAD measure.

Recent reviews (e.g., Blöte, Kint, Miers, & Westenberg, 2009; Pull, 2012) suggest substantial evidence supporting public speaking anxiety (PSA) as a distinct subtype of SAD, rather than simply a minor form of SAD. Pull (2012) noted that fear of public speaking is a frequent feature of SAD and may also be present in the absence of other features of the disorder. Some findings indicate that while performance-only fears may

occur in isolation, warranting a subtype, these fears co-occur with other social fears in the majority of individuals, and in this case, tend to be associated with greater impairment (Knappe et al., 2011).

SAD is also one of the most impairing of the psychiatric disorders across multiple life domains (Aderka et al., 2012; Alonso et al., 2004), impacting employment (e.g., Wittchen, Fuetsch, Sonntag, Muller, & Liebowitz, 2000), academic achievement (e.g., Stein & Kean, 2000) and relationship quality and satisfaction (Davila & Beck, 2002; Sparrevohn & Rapee, 2009). When left untreated, social anxiety is typically chronic, and remission is rare (Wittchen & Fehm, 2001; Yonkers, Dyck, & Keller, 2001). Of those who do achieve remission, close to one-third are likely to experience a relapse within 4-5 years (Keller, 2003).

Given the considerable distress and interference associated with this disorder, effective treatments are sorely needed. Unfortunately, studies show that many socially anxious individuals do not seek treatment at all or only do so many years after the onset of symptoms (Ossman, Wilson, Storaasli, & McNeill, 2006). Moreover, even when socially anxious individuals do actively seek treatment, few ultimately follow through (Amir et al., 2009; Coles, Turk, Jindra & Heimberg, 2004). For example, in one study, as few as 15% of individuals with SAD who contacted an anxiety clinic initiated a treatment program (Coles et al., 2004). Among those who do pursue a course of treatment, drop-out rates are high, with between 10 to 25% of individuals failing to complete treatment (Davidson et al., 2004; Eskildsen, Hougaard & Rosenberg, 2010; Heimberg et al., 1998). Thus, research is clearly needed to enhance the accessibility and acceptability of treatments for SAD.

Cognitive Behavioral Model of, and Approach to Treating, SAD

Cognitive behavioral model. The predominant theory of social anxiety that has guided the development and refinement of treatments is the cognitive behavioral (CB) model. From this perspective, social anxiety arises from faulty beliefs in the likelihood and social cost of negative social events, a negative bias regarding the interpretation of social interactions, restricted awareness, also called self-focused attention, and behavioral avoidance (Clark & Wells, 1995; Clark, 2005; Rapee & Heimberg, 1997).

From a CBT perspective, individuals struggling with social anxiety engage in a number of behavioral responses that perpetuate the disorder. In an attempt to avoid negative evaluation, those with SAD often avoid situations and activities that could potentially increase social anxiety. This behavioral pattern is perpetuated by negative reinforcement, as both avoidance and escape behaviors reduce anticipatory anxiety. Thus, behavioral avoidance prevents those with SAD from learning that many of their fears are irrational.

Additionally, theorists posit that some behaviors driven by social fear and the desire to avoid negative evaluation can paradoxically increase one's risk for negative evaluation (Clark, 2005). For example, a socially anxious woman may avoid responding to a friend's questions due to the fear of sounding unintelligent. At the root of this is the woman's fear of rejection by her friend; that is, she believes that if she sounds unintelligent, her friend will reject her. Yet, as a direct result of the woman's minimal engagement in conversation, her peer may end the conversation quickly and walk away. In other words, the very behavior that was chosen to minimize rejection could cause it.

Cognitive behavioral therapy. Following from the cognitive-behavioral conceptualization of social anxiety disorder (SAD), cognitive behavioral therapies (CBTs) aim to change faulty thoughts and decrease behavioral avoidance. Although Cognitive Behavioral Group Therapy (CBGT; Heimberg & Becker, 2002), which combines cognitive restructuring and exposure is typically considered the “gold standard” treatment (Hofmann & Bogels, 2006), all types of CBT (e.g., exposure, cognitive restructuring, relaxation, and social skills training) appear to be effective for adults with SAD (Rodebaugh, Holaway, & Heimberg, 2004). Active CBT treatments have yielded better results than control conditions on cognitive, behavioral and general subjective distress measures (Powers, Sigmarsson, & Emmelkamp, 2008).

Studies investigating the relative efficacy of specific components of CBT have demonstrated mixed results and consequently, there is a lack of clarity surrounding the underlying mechanism of change in CBTs (Forman, Herbert, Moitra, Yeomans, & Geller, 2007; Hofmann, 2004). However, a growing body of evidence suggests that cognitive restructuring may not be a necessary component of treatment. Exposure interventions appear to produce the largest effect sizes (Gould, Buckminster, Pollack, Otto, & Yap, 1997) and few studies have shown cognitive restructuring to add to the efficacy of exposure (Butler, Chapman, Forman, & Beck, 2006; Hofmann, 2004; Hope, Heimberg, & Bruch, 1995; Powers et al., 2008).

Although CBTs for SAD are relatively efficacious, there is still considerable room for improvement. First, as mentioned earlier, drop-out rates in CBT for SAD are high, between 10 and 25% (Davidson et al., 2004; Eskildsen et al., 2010; Heimberg et al., 1998; Hofmann & Suvak, 2006). Individuals who complete and respond to treatment

often still score in the clinical range on social anxiety measures (Dalrymple & Herbert, 2007). Moreover, a significant proportion of patients, as many as 40-50%, do not respond to treatment at all (e.g., Heimberg, 1998; Herbert et al., 2005; Hofmann & Bogels, 2006). There is some evidence that CBGT for SAD improves quality of life, although perhaps only in the interpersonal domain (Eng, Coles, Heimberg & Safren, 2001), yet post-treatment scores are often below that of a normative sample (Eng et al., 2001; Heimberg, 2002; Watanabe et al., 2010).

Limitations of the cognitive-behavioral model of SAD. While the cognitive behavioral model remains the dominant theory of social anxiety, guiding the majority of treatment development and refinement, recent research has identified characteristics of SAD that have been largely ignored in CBT. Experiential avoidance, referring to an individual's unwillingness "to remain in contact with particular private experiences (e.g., bodily sensations, emotions, thoughts, memories, behavioral predispositions)" and attempts "to alter the form or frequency of these events in the contexts that occasion them" (Hayes, Strosahl, & Wilson, 1999, p. 58), has been theorized to play an important role in the development and maintenance of social anxiety (e.g., Kashdan, Breen, Afram, & Terhar, 2010; Kashdan, Morina, & Priebe 2009). Research suggests that socially anxious individuals are more likely to attempt to suppress (Kashdan & Steger, 2006), and have greater difficulty accepting, (Turk, Heimberg, Luterek, Mennin, & Fresco, 2005), their emotions compared to those without SAD.

This experiential avoidance may be driven by the problematic relationship that individuals with SAD appear to have with their internal experiences. For example, individuals with SAD are less likely to understand their emotions (Mennin, McLaughlin,

& Flanagan, 2009; Turk et al., 2005), have greater difficulty describing their emotions (Turk et al., 2005) and pay less attention to their emotions (Turk et al., 2005) than controls. However, neither experiential avoidance, nor a problematic relationship with emotions, are accounted for in cognitive behavioral models of SAD or addressed in traditional CBT treatment.

A lack of clarity about personal values, and values inaction, has also been proposed to cause and maintain psychopathology (Hayes et al., 1999). It is likely that individuals who are less connected to social-related values may be more avoidant. For example, an individual who is disconnected from his or her values about friendship may be more likely to avoid social engagements. Similarly, a student who is unclear about his or her academic values may be less likely to participate in class.

Summary. In summary, while the cognitive behavioral model is the predominant theory of SAD, it neglects important aspects of SAD (e.g., association with experiential avoidance, difficulty with internal experiences, disconnection from personal values). Since these aspects of SAD are not accounted for in the CBT model, they are not specifically targeted in CBT treatment, the most widely implemented evidence-based approach to psychotherapy. This might partially explain the modest impact of CBT on SAD. Consequently, there have been efforts to offer refined models of SAD that might result in more powerful treatments.

Acceptance-Based Behavioral Model of, and Approach to Treating, SAD

Acceptance-based behavioral model. Herbert and Cardaciotto (2005) proposed an experiential avoidance model of social anxiety that may inform treatment innovation.

This perspective suggests that once socially anxious individuals' awareness of, and attention to, anxious thoughts and feelings heighten, low levels of self-compassion and acceptance engender efforts to experientially avoid or control internal experiences. For example, someone may become aware that his heart rate is increasing when he enters a social situation, have the thought "I am an idiot for getting anxious," judge this response to be unacceptable and a sign of personal weakness, and thus engage in cognitive strategies aimed at suppressing or distracting himself from the unpleasant thoughts and sensations. Unfortunately, such attempts at experiential avoidance are often associated with two negative consequences. First, attempts to avoid thoughts and emotions paradoxically increase the frequency and intensity of these responses (e.g., Abramowitz, Tolin, & Street, 2001; Dalgleish, Yiend, Schweizer, & Dunn, 2009). Second, efforts aimed at experiential avoidance can interfere with engagement in personally valued activities, either by distracting one from the present moment or by limiting the situations or activities one is willing to pursue (Roemer & Orsillo, 2009). This reduced behavioral flexibility can erode life satisfaction (Ossman et al., 2006).

Acceptance-based behavioral therapy. Informed by this model, Herbert and Cardaciotto (2005) theorized that an acceptance-based behavioral approach to treatment would be effective in the treatment of social anxiety. ABBTs are a class of therapies which includes approaches such as Acceptance and Commitment Therapy (ACT; Hayes et al., 1999) and Dialectical Behavior Therapy (DBT; Linehan, 1993), and Mindfulness-based Cognitive Therapy (MBCT; Segal, Williams, & Teasdale, 2002), that have been developed to target experiential avoidance and reduced valued action using acceptance and values articulation strategies. Acceptance is conceptualized as a means of countering

experiential avoidance, as it is a novel way of responding to one's private experiences (Roemer & Orsillo, 2009). Psychological acceptance refers to "an active taking in of an event or situation" (Hayes et al., 1999, p. 77) characterized by the cultivation of an "open, compassionate stance, noticing whatever occurs" (Roemer & Orsillo, 2009, p.115).

Values articulation is conceptualized as the clarification of personally meaningful areas of life, such as family or education, and the identification of behaviors and actions in which one can engage in order to pursue these areas (Roemer & Orsillo, 2009). Values are considered life directions, and are distinguished from goals, which are objectives that can be met. Goals encompass achievable outcomes, while values are present-focused and promote unending engagement in meaningful activities.

ABBTs generally, and ACT specifically, employ a range of clinical strategies that support values-consistent behavior. Facilitating clients' articulation of personally held values is an early step in promoting valued action. The process of articulating clients' values, also known as values clarification, may be achieved via several strategies. Clients may be asked to write descriptions of their values in various life domains, such as family relations, friendships and career, using a series of written prompts. For example, in the domain of friendships, a prompt may ask "what it means to you to be a good friend. If you were able to be the best friend possible, how would you behave toward your friends?" (Hayes et al., 1999, p. 224). In a more structured rating form, clients are instructed to rank order the importance of valued life domains. Experiential exercises may be employed in the service of values articulation as well. An exercise known variably as *What Do You Want Your Life to Stand For?* and *the Epitaph Exercise* encourages clients to imagine their own funerals and state how, and for what, they would

like others to remember them. In a variation, clients are asked to write what they hope their tombstone will say (Hayes et al., 1999). In identifying the behaviors and actions they most hope to be remembered for, clients have the opportunity to identify gaps between values and behaviors.

In ABBTs, acceptance strategies are taught in the context of pursuing valued actions. Specifically, the use of clinical strategies to promote a compassionate stance toward internal experiences is thought to target experiential avoidance that is likely interfering with a client's ability to behave in a manner consistent with valued life directions. For example, a mindfulness exercise in which clients are guided to notice their breath, without attempting to change it serves as a model for paying attention to, and accepting other internal experiences as they occur. The natural wish for unpleasant internal experiences to be different typically leads to efforts to change, rather than accept them. The terms *clean* and *dirty* (Hayes et al., 1999) or *clear* and *muddy discomfort* (Roemer & Orsillo, 2009) are used to describe internal experiences occurring as the direct result of an event (clear) and those occurring as the result of wishing internal experiences were different and thereby trying to control them (muddy). Muddy discomfort, which may occur in the form of emotions, thoughts, or physical sensations, generally adds to one's distress.

Both narrative reviews (Ruiz, 2010) and meta-analyses (e.g., Hofmann, Sawyer, Witt, & Oh, 2010) have recently demonstrated the efficacy of acceptance-based behavioral approaches for a wide variety of presenting problems. For example, ABBTs are effective for individuals struggling with mood symptoms and anxiety symptoms (Hofmann et al., 2010), generalized anxiety disorder (Roemer & Orsillo, 2007; Roemer,

Erismann, & Orsillo, 2009), psychotic disorders (e.g., Bach & Hayes, 2002), post-traumatic stress disorder (e.g., Twohig, 2009), alcohol dependence (e.g., Heffner, Eifert, Parker, Hernandez, & Sperry, 2003), and chronic pain (e.g., McCracken, Vowles, & Eccleston, 2005; McCracken, Vowles, & Gauntlett-Gilbert, 2007). Preliminary data suggest that ABBT approaches may also be beneficial in the treatment of social anxiety and its sequelae.

Acceptance-based approaches to SAD. Seven published articles describing the efficacy of an acceptance-based approach to treating SAD have been published to date (Block & Wulfert, 2000; Brady & Whitman, 2012; Dalrymple & Herbert, 2007; England et al., 2012; Kocovski, Fleming, Hawley, Huta, & Antony, 2013; Kocovski, Fleming, & Rector, 2009; Ossman et al., 2006). For a more comprehensive review of these studies, please see Appendix A. Unfortunately, the studies are characterized by a number of methodological limitations. One article described a single case (Brady & Whitman, 2012) and four others used a single group open trial design (Dalrymple & Herbert, 2007; Kocovski et al., 2009; Ossman et al., 2006), two research methods associated with considerable threats to internal validity. Although 3 randomized controlled trials have evaluated the efficacy of an ABBT for SAD relative to a cognitive behavioral comparison treatment (Block & Wulfert, 2000; England et al., 2012; Kocovski et al., 2013), in one of those three studies (Block & Wulfert, 2000), there were fewer than seven participants in each treatment condition. Given the relatively strong research supporting the use of CBT for SAD, more well designed studies are needed to evaluate the relative efficacy of acceptance-based approaches.

Moreover, although all seven of the aforementioned studies employed acceptance-based clinical methods, the form and frequency of the strategies used to elicit personal values varied widely across protocols. For example, values articulation methods ranged from the completion of a questionnaire (the Valued Living Questionnaire; VLQ; Wilson, 2002; Wilson & Murrell, 2004) to the use of an experiential exercise that required participants to describe what they wanted their life to stand for. Further, given that all of the studies described above incorporated specific behavioral strategies (such as exposure therapy) into ABBT for SAD, research is needed to explore the specific, unique contributions of acceptance and values strategies.

To date, only one study has examined the potential impact of values on social anxiety in a lab-based experimental study. Goldfarb (2009) compared the effects of three 15 minute interventions (acceptance, cognitive restructuring, educational control) on public speaking anxiety in a sample of 45 college students. Although participants in all three groups reported decreased distress in response to a speech task and an increased willingness to engage in a public speaking activity, there were no between-group differences. Further, although the potential benefits of living a valued life was mentioned in the acceptance condition, participants' individual values were not articulated or explored.

Herbert and Cardaciotto (2005) proposed a model of SAD grounded in ABBT theory, but there is limited empirical support of the model. Some studies demonstrate an association between SAD and experiential avoidance. For example, Glick and Orsillo (2011) found that higher levels of social anxiety were positively associated with levels of experiential avoidance. Further, their findings indicated that experiential avoidance

predicted social anxiety over and above the effects of self-focused attention, and mediated the relationship between the two. Kashdan and colleagues (2013) found that compared to healthy controls, individuals diagnosed with SAD reported greater levels of experiential avoidance (Kashdan et al., 2013). Mahaffey and colleagues (2013) found that those with higher levels of SAD endorsed greater experiential avoidance and that SAD-specific dysfunctional cognitions were moderately correlated with experiential avoidance (Mahaffey, Wheaton, Fabricant, Berman, & Abramowitz, 2013). While it appears that the relation between experiential avoidance and SAD is supported, the specific role of values in the ABBT model has not been tested.

Similarly, ABBTs based on this model of SAD offer promise for treatment, but the research is still in its early stages. Preliminary evidence for acceptance-based approaches exists, and although they systematically emphasize acceptance and mindfulness, their focus on values has not been consistent. Lab studies have begun to demonstrate the efficacy of values interventions (e.g., Gutiérrez, Luciano, Rodriguez & Fink, 2004; Páez-Blarrina et al., 2008), but a better understanding is needed of the impact of more clinically relevant values interventions in the context of SAD. For a review of these studies, please see Appendix B.

Summary. Social anxiety is prevalent, chronic and can be vastly debilitating. Effective, accessible, and acceptable treatments are needed. Cognitive behavioral therapies have garnered substantial empirical support for the treatment of SAD (Butler et al., 2006; Norton & Price, 2007). Although CBTs are effective in reducing social anxiety, they are not sufficient, likely resulting from shortcomings in the underlying model of SAD. Specifically, CB models fail to account for distress related to experiential

avoidance and values inaction, which appear to be key features of SAD (Kashdan & Steger, 2006). To date, CBT for SAD has also been characterized by high drop-out rates (e.g., Davidson et al., 2004; Heimberg et al., 1998), which could in part reflect the absence of a client-centered rationale for treatment. Thus, treatment for social anxiety might be improved with the integration of strategies aimed at increasing acceptance and engagement in valued action. Clients may be more willing to stay engaged in treatment, if the rationale is focused on facilitating action in the domains of functioning personally valued by the client. An acceptance-based model of SAD suggests that connecting behavior to personally meaningful values will enhance one's ability to engage in anxiety-provoking activities, such as those associated with seeking out, initiating and engaging in treatment (e.g., speaking with strangers, discussing symptoms, engaging in treatment exercises). Consequently, an important first step in current treatment refinement is research aimed at evaluating the specific contribution of ABBT components to overall SAD treatment. Specifically, understanding the impact of the values component will be significant.

Overview of the Present Study

The primary goal of the current study was to examine the relationships among values, experiential avoidance, social anxiety, and willingness to engage in anxiety-provoking activities. A secondary goal was to preliminarily explore the efficacy of a brief values intervention on participants' willingness to engage in anxiety-provoking activities. We chose to focus on a sample of individuals with significant public speaking anxiety (which is a core fear in social anxiety disorder [APA, 2013]) as an analogue that may provide some understanding about SAD more generally. This is a common approach in

the literature (e.g., Block & Wulfert, 2000; Jones, Fazio, & Vasey, 2012). Recruiting individuals with public speaking anxiety also provided the opportunity to develop standardized questions and experimental tasks specifically relevant to the primary feared object, which is harder to do with a group of participants with generalized social anxiety. Willingness to engage in a lab-based exposure, that is, engaging in a feared activity, may represent an experimental analogue of willingness to engage in SAD treatment-related activities. The present study adds to the existing literature on the utility of ABBT for SAD by specifically testing the unique contribution of values articulation on willingness and valued action.

Hypotheses

1. Participants' public speaking anxiety will be negatively associated with the degree to which they are willing to engage in academically relevant activities.
2. The degree to which participants value academic activities will predict self-reported willingness to engage in such activities over and above the effects of public speaking anxiety.
3. Socially anxious individuals who participate in a values articulation manipulation, with a values-informed rationale, will be more willing to engage in an ***anxiety-provoking task*** than those receiving a cognitive restructuring manipulation with a habituation rationale and those assigned to a neutral control manipulation condition.
4. Socially anxious individuals who participate in a values articulation manipulation, with a values-informed rationale, will report more willingness to engage in ***anxiety provoking classroom activities*** than those receiving a cognitive

restructuring manipulation with a habituation rationale and those assigned to a neutral control manipulation condition.

5. Socially anxious individuals who participate in a values articulation manipulation, with a values-informed rationale, will report *a greater increase in academic values activities at ten-day follow-up* than those receiving a cognitive restructuring manipulation with a habituation rationale and those assigned to a neutral control manipulation condition.

CHAPTER TWO

METHOD

Participants

Participants were recruited from undergraduate psychology courses at two private colleges in an urban setting¹. IRB approval was granted from both institutions. Inclusion criteria were that participants must have been at least 18 years of age and able to independently complete an online survey written in English. At one university, participants received one research credit for completing questionnaires online (Time 1) and, if eligible, one research credit for the lab portion of the study (Time 2). For some participants at this university, research participation credit (in any study) was a requirement, while for others it counted as extra credit in their coursework. This difference was determined by the students' professors. Students recruited from the second university received a \$10 Amazon gift card for Time 1 and second \$10 Amazon gift card for completing Time 2. Upon completion of Time 2, all participants were informed that compensation (a \$10 Amazon gift card) was available for completing a set of online follow-up questionnaires ten days later (Time 3). Participants who completed Time 3 questionnaires within 24 hours of receiving them received an additional "bonus" \$10 Amazon gift card. On average, participants completed follow-up questionnaires 11.0 days after participating in the intervention.

¹ Due to an error in recruitment strategy, two individuals from schools not intentionally targeted for recruitment participated in Time 1.

A total of 127 students completed the Time 1 questionnaire portion of the study. Two participants completed Time 1 questionnaires twice and thus were excluded from analyses. Eight participants' responses were deemed invalid and thus also excluded². Thus, the final sample at Time 1 consisted of 117 participants. One hundred thirteen participants were recruited from the primary university and 12 were students from the second recruitment site. This sample was 74% female ($N = 87$); 66% ($N = 77$) self-identified as White or Caucasian, 11% ($N = 13$) as Asian, and 6% ($N = 7$) as Black, African, or African American. The mean age of the sample was 20.1 ($SD = 3.00$) and participants ranged in age from 18 to 44 years. A total of 65 participants qualified for the lab portion of the study (Time 2) by scoring a 16 or above on the Personal Report of Confidence as a Speaker. Of the 65 eligible students, 43 indicated that they were interested in being contacted for the lab portion of the study. Of these 43 interested students, 33 were reached by phone. Those who were not reached did not return phone calls or respond to emails. Three students who were reached indicated that they had lost interest in participating in Times 2 and 3 of the study. Thus, 30 students were scheduled and randomized to one of the three study conditions. Two students who were scheduled and randomized subsequently canceled and did not reschedule. Thus, 28 students completed the lab portion (Time 2) of the study. In order to determine whether or not completers differed from non-completers, a series of independent samples t-tests were conducted. Contrary to expectations, a significant difference was found in public

² One participant gave uniform responses throughout each measure (e.g., responded "Sometimes" to all items of the SPAI-23) and one participant neglected to complete baseline questionnaires. Six participants scored between 16 and 20 on the PRCS before the change in cut off score was made. Thus, these individuals were considered ineligible for Times 2 and 3 when participating, but at the time of data analysis, their scores were no longer considered ineligible.

speaking anxiety between completers ($M = 22.68$, $SD = 3.40$) and non-completers ($M = 20.62$, $SD = 3.09$; $t = -2.50$, $p = .013$, two-tailed) such that completers reported significantly more anxiety. No other significant differences were found between completers and non-completers (see Table 1).

Of the 28 who completed Time 2, 27 completed the follow up questionnaires (Time 3). A CONSORT diagram illustrating the flow of participants through the study is presented below in Figure 1.

Measures (see Appendix C)

Personal Report of Confidence as a Speaker (PRCS; Paul, 1966) is a measure that assesses individuals' behavioral and affective responses to public speaking situations. Questions are posed in a true-false format. The measure was initially developed by Gilkinson (1942) and modified to a 30-item version by Paul (1966). Fifteen of the items are reverse scored (i.e., items 1, 4, 6, 9 to 12, 14, 16, 17, 21 to 23, 27, and 30). The PRCS has adequate convergent validity, demonstrating significant correlations with 12 measures of speech and social anxiety, ranging from .52 to .97 (Daly, 1978). The PRCS did not differ significantly across gender or race in a college student sample (Phillips, Jones, Rieger, & Snell, 1997). The measure has been used widely as a screening tool in studies of public speaking anxiety and was used as such in the current study to determine eligibility for Phase II; however, there is no standard method for utilizing PRCS score to determine public speaking anxiety (Phillips et al., 1997). Some studies have utilized cutoff scores of 16 to screen for public speaking anxiety (e.g., Carrigan & Levis, 1999). However, other studies suggest that mean PRCS scores in socially anxious samples are somewhat higher, ranging from 21 to 27 (e.g., Anderson, Zimand, Schmertz, & Ferrer,

2007; Donahue et al., 2009; García-López, Olivares, & Hidalgo, 2005; Moscovitch & Hofmann, 2007). For the current study, participants with a PRCS score of 20 or higher were initially considered to have public speaking anxiety severe enough to be eligible for Phase II of the study. Following the initial period of recruitment, a more liberal cut off score of 16 or higher on the PRCS was adopted in order to maximize the potential that anxious students would be included at Times 2 and 3 of the study. Additionally, given that the current study was exploratory, and aimed to use an analogue sample, a PRCS score of 16 or higher was considered to be a level of public speaking anxiety severe enough. In the current sample, the PRCS demonstrated good internal consistency, with a Cronbach alpha coefficient of 0.89.

Social Phobia and Anxiety Inventory-23 (SPAI-23: Roberson-Nay, Strong, Nay, Beidel, & Turner, 2007) is a 23-item measure of symptoms of social anxiety that has demonstrated strong psychometric properties for use in college student samples (Schry, Roberson-Nay, & White, 2012). Participants rate each item from 0 (never) to 4 (always). The measure provides three scores, a total score and one each for Social Phobia and Agoraphobia subscales. A Difference score is obtained by subtracting the Agoraphobia score from the Social Phobia score. A Difference score of 28 or greater has been suggested to indicate the presence of SAD (Schry et al., 2012). Internal consistency in four college student samples exceeded .90 for the Social Phobia subscale and .80 for the Agoraphobia subscale. Acceptable test-retest reliability was found for all three scores that the measure provides, ranging from .72 – .78. In the current sample, internal consistencies for the Social Phobia (.94) and Agoraphobia (.89) scales were good. The data gathered from this measure aided in assessing prevalence of social anxiety in the

sample. SPAI data served a descriptive function, as it identified individuals in this sample with public speaking anxiety who report clinically significant SAD symptoms.

Academic Valued Action Questionnaire (AVAQ). For the purpose of this study, five questions assessing the degree to which individuals value specific academic activities were developed. Participants rated the degree to which they value these activities from 0 (Not at all Important) to 4 (Very Important). This measure demonstrated good internal consistency (Cronbach alpha coefficient = .80) in the current sample.

Willingness Questionnaire (WQ). For the purpose of this study, four questions targeting the assessment of willingness to engage in potentially anxiety-provoking academic activities were developed. Participants rated their willingness to engage in activities such as raising their hands in class and approaching a professor from 0 (Completely Unwilling) to 4 (Completely Willing). Internal consistency in the current sample was good, with a Cronbach alpha coefficient of .86.

Self-report of Public Speaking Behaviors (SPSB). Using a measure developed for the current study, participants reported on the frequency with which they engage in academic activities presumed to be anxiety-provoking for individuals with public speaking anxiety, such as raising one's hand in class and approaching a professor. Participants indicated the number of times they engaged in the behavior ranging from 0 times to 5 or more times. Internal consistency for the full scale in this sample was .64. Given the low internal consistency in this sample, and the fact that the measure was created specifically for the current study, further exploration was indicated. Our hypothesis was that some of the low frequency behaviors (e.g., giving a presentation) may have been negatively impacting internal consistency. Based on the *alpha if item is*

deleted data, we created an index of public speaking behaviors that consisted of the two items in which participants report the number of times they have raised their hands in class, either to ask a question or volunteer an answer. The internal consistency of this two-item scale was .80. Moreover, an independent samples t-test analysis revealed a significant difference in response to these two items between those high ($M = 3.00$, $SD = 1.78$) and low in public speaking anxiety ($M = 4.27$, $SD = 1.96$; $t = 3.67$, $p = .000$, two-tailed), lending support to its validity as a measure of public speaking behaviors. Thus, the two-item subscale was used in all analyses.

Acceptance and Action Questionnaire – II (AAQ-II: Bond et al., 2011) is a 7-item measure developed to measure experiential avoidance, and has demonstrated good preliminary psychometric properties in variety of samples, including college students (Bond et al., 2011). Participants rate each item, such as “I’m afraid of my feelings,” from 0 (never true) to 6 (always true). The measure provides a total score, with higher scores indicating greater levels of experiential avoidance and lower scores indicating greater levels of acceptance. Across 6 samples, the mean alpha coefficient was .84 and 3-month test-retest reliability was .81 (Bond et al., 2011). In the current sample, internal consistency was .93.

Manipulation Check Questionnaire. A manipulation check questionnaire was created for the current study. The questionnaire was designed to assess participants’ engagement with, and understanding of, the material presented during the manipulation. Participants received one point for each correct answer to three items that tested participants’ understanding of the material presented. Manipulation checks were scored 0 – 3 based on these three content-related items. In order to pass the manipulation quiz,

participants had to score 2 or above out of a possible 3. Participants were also asked to provide a single subjective rating of their alertness during the manipulation.

Procedure

This study consisted of three assessment points, referred to as Times 1, 2, and 3. Students were recruited from two universities via a cloud-based research and participant management system (SONA) and/or via flyers (Appendices D1 and D2) posted around the campus. Interested students were directed to a Survey Monkey link containing an informed consent form (Appendix E1), and study measures (Appendix C). Upon completion of the questionnaires (Time 1), students who achieved the predetermined cutoff score (16) on the PRCS, and were thus considered eligible for the second phase of the study, and who expressed an interest in being contacted for an opportunity to participate in a second study, were contacted regarding their eligibility.

Participants were contacted by a research assistant who described the second phase (Times 2 and 3) of the study utilizing the phone script in Appendix D4 or D5. Participants engaged in one individual session in the lab lasting up to one hour. Upon arrival, participants were asked to consent to the study and then to relax quietly for two minutes in a recliner in order to acclimate to the lab environment. Participants were randomly assigned to one of three possible study conditions utilizing block randomization to ensure equal groups. Randomization was also matched on gender to ensure an equivalence of men and women in each condition. Depending on condition, participants then engaged in a values writing task (see Appendix F1), cognitive restructuring task (see Appendix F2), or psychological control task (see Appendix F3). At the end of the condition recording, participants engaged in a brief manipulation check, consisting of a

quiz (see Appendix G). Following the manipulation check, participants were asked whether they were willing to participate in an exposure related to public speaking utilizing a script (Appendix H). Specifically, participants were asked if they were willing to give a brief, impromptu speech about their experience during the study to a group of students considering participation. Participants were told that these students were meeting nearby for an introductory psychology class. Exposures were not conducted, as willingness is the construct of interest, rather than engagement in the exposure. Participants were then given instructions about the final portion of the study (Time 3 - Follow-up).

Follow-up was conducted ten days after participants' involvement in phase two in the lab. Participants received an email, directing them to a Survey Monkey link, consisting of study measures; specifically the PRCS, AVQ, WQ, and SPSB were included. It also included information debriefing participants on the nature of the study as well as a list of resources about social anxiety, general anxiety, and contact information for the Suffolk University Counseling Center (Appendix I1). At the close of the entire study, participants received an email message debriefing them on the deception aspects of the study (i.e., that no participants were actually chosen to give an impromptu speech and that the neutral condition is not an empirically supported treatment for public speaking anxiety) and again provided a list of resources about social and general anxiety (Appendix I2).

CHAPTER THREE

RESULTS

Preliminary Analysis and Data Analytic Plan

Preliminary data analyses were conducted to test for normality. Tests for linearity and homoscedasticity were conducted separately with each statistical analysis to ensure that the data met assumptions for the statistical test. Violations in assumptions and corrections are presented below with each set of analysis.

Data were collected on 127 college students in the Boston area between March 2013 and March 2014. Due to exclusions explained above, 117 participants were available for analyses at Time 1. A series of independent samples t-tests were conducted comparing those who were eligible (high public speaking anxiety) and ineligible (low public speaking anxiety) for Times 2 and 3 of the study on the basis of their scores on the PRCs. As expected, several differences emerged. Significant differences were found between those high and low in anxiety on public speaking anxiety, social anxiety, academic values, willingness, and report of public speaking behaviors (see Table 2). A one-way ANOVA was conducted on 27 participants who were randomized into one of three groups (values, cognitive, neutral) to test for the presence of baseline differences between groups. No significant differences were found between groups at baseline on measures of on public speaking anxiety, social anxiety, academic values, willingness, and report of public speaking behaviors.

Additionally, quiz scores from the manipulation checks were not different between groups. No significant differences were found between groups in level of self-

reported alertness during the interventions. Regarding understanding of the material, 2 participants in the Values condition failed to meet the cutoff score of 2, and 1 participant failed in the Neutral condition.

Hypothesis Testing

In order to test the first hypothesis that at baseline, individuals' public speaking anxiety would be negatively associated with the degree to which they were willing to engage in academically relevant activities, a series of correlational analyses were conducted. As predicted, public speaking anxiety was associated with willingness ($r = -.44, p < .01$). Unexpectedly, public speaking anxiety was positively associated with behavior ($r = .33, p < .01$). Correlations of all study variables at Time 1 are shown in Table 3.

In order to test the second hypothesis that at baseline, the degree to which individuals value their learning and education would predict self-reported willingness to engage in academically valued activities over and above the effects of public speaking anxiety, a multiple linear regression was conducted with willingness as the dependent variable. PRCS score was entered at Step 1, explaining 19.7% of the variance in willingness. After AVAQ score was entered in Step 2, the total variance explained by the model as a whole was 40.6%, $F(1, 110) = 37.6, p < .001$. AVAQ scores explained an additional 20.5% of the variance in willingness, after controlling for anxiety, $R^2 \Delta = .21$, $F\Delta(1, 110) = 37.98, p < .001$.

The third hypothesis could not be tested as planned (utilizing a chi square analysis), due to the unexpectedly small sample size at Times 2 and 3. Consequently, the hypothesis that participants in the values condition will be more likely to report

willingness to engage in an anxiety-provoking task than those in the cognitive or neutral conditions was explored utilizing descriptive data (see Figure 2). Fifty percent of those in the values condition were willing as compared to 33% in the cognitive and 50% in the neutral condition.

Next, the fourth hypothesis, that socially anxious individuals who participated in a values articulation manipulation would report a greater increase in willingness to engage in anxiety provoking classroom activities than those receiving a cognitive restructuring manipulation and those assigned to a neutral control manipulation, was tested. A series of paired samples t-tests were conducted due to the small sample size of participants at Times 2 and 3. In the Values condition, there was a non-significant increase in willingness from Time 1 for ($M = 3.77, SD = 1.91$) to Time 3 ($M = 5.13, SD = 2.62$), $t(5) = -2.07, p = .07$. The change in willingness appeared in the expected direction with a moderate to large effect size ($d = -.69$). There was also a non-significant increase in willingness in the Cognitive condition from Time 1 ($M = 4.53, SD = 2.05$) to Time 3 ($M = 4.93, SD = 2.18$), $t(8) = -.57, p = .58, d = -.19$. A similar result was found in the neutral from Time 1 ($M = 4.40, SD = 2.50$) to Time 3 ($M = 5.11, SD = 2.82$), $t(5) = -1.70, p = .17, d = -.57$. (See Figure 3).

Finally, the fifth hypothesis, that socially anxious individuals who participate in a values articulation manipulation, would report a greater increase in academic values activities at ten-day follow-up than those receiving a cognitive restructuring manipulation and those assigned to a neutral control manipulation, was tested. A series of paired samples t-tests were conducted due to the small sample size of participants at Times 2 and 3. In the Values condition, there was a significant increase in public speaking

behaviors from Time 1 for ($M = 2.67$, $SD = 1.87$) to Time 3 ($M = 3.78$, $SD = 2.04$), $t(5) = 3.00$, $p = .02$, with a large effect size ($d = -1.00$). There was also a non-significant increase in public speaking behaviors in the Cognitive condition from Time 1 ($M = 3.11$, $SD = 2.04$) to Time 3 ($M = 3.44$, $SD = 1.55$), $t(8) = -.87$, $p = .41$, $d = -.29$. Finally, in the Neutral condition there was no change in public speaking behaviors from Time 1 ($M = 3.06$, $SD = 1.93$) to Time 3 ($M = 3.06$, $SD = 2.07$), $t(5) = .00$, $p = 1.00$, $d = 0$.

CHAPTER FOUR

DISCUSSION

Social anxiety disorder in general, and public speaking anxiety in particular, are highly prevalent among college students (Stewart & Mandrusiak, 2007). If untreated, social anxiety can significantly impair quality of life and diminish educational achievement (Van Ameringen, Mancini, & Farvolden, 2003). Despite the impairing nature of SAD, many socially anxious individuals have difficulty seeking treatment (Ossman et al., 2006) and of those who do, few follow through (Amir et al., 2009; Coles et al., 2004). Cognitive behavioral therapies (CBTs) have demonstrated efficacy in reducing social anxiety, but drop-out rates are high (e.g., Davidson et al., 2004; Heimberg et al., 1998) and 1/3 or more of those who receive treatment are non-responders (e.g., Heimberg, 1998; Herbert et al., 2005; Hofmann & Bogels, 2006). Thus, refinement to both our models of social anxiety disorder, and the treatments informed by these theories are clearly needed. An acceptance-based model of SAD was proposed by Herbert and Cardaciotto (2005), but more research is needed to determine the specific role of personal values clarity and articulation in the development and treatment of social anxiety.

Drawing from the extant literature on SAD, the present study sought to examine the relationships among academic values, experiential avoidance, public speaking, and willingness to engage in anxiety-provoking activities. In a subsample of participants who reported public speaking anxiety, we then explored the efficacy of a brief values intervention on participants' willingness to engage in anxiety-provoking activities.

Our results suggest that valued actions may hold a significant place in models of SAD and thus have implications for treatment. As expected, a significant relation was

found between public speaking anxiety and willingness, such that greater anxiety was associated with decreased willingness to engage in valued, anxiety-provoking activities. This finding is consistent with those studies that have demonstrated a link between experiential avoidance and SAD (e.g., Glick & Orsillo, 2011; Kashdan et al., 2013; Mahaffey et al., 2013).

Our hypothesis that the degree to which individuals value academic activities, such as raising one's hand in class or speaking with a professor, would predict their willingness to engage in such activities, over and above their level of public speaking anxiety was also supported. This raises interesting implications for treatment of SAD. Dalrymple and Herbert (2007) note that connecting one's behavior to personally valued life directions is likely to augment an individual's willingness to experience anxiety. As such, consistent with an acceptance-based model of SAD, it may be that individuals with SAD possess greater capability of engaging in anxiety-provoking activities, such as those associated with seeking out, initiating and engaging in treatment (e.g., speaking with strangers, discussing symptoms, engaging in treatment exercises), when encouraged to connect their behavior to their personal values that relate to addressing their anxiety in treatment (e.g., family, career).

Our third hypothesis, that socially anxious individuals who participated in a values articulation manipulation, with a values-informed rationale, would be more willing to engage in an anxiety-provoking task than those receiving a cognitive restructuring manipulation with a habituation rationale and those assigned to a neutral control manipulation condition yielded interesting preliminary information. An equal number of individuals in the values and neutral conditions responded that they were and were not

willing to engage in the speech task, whereas the proportion of those who were unwilling was greater than those who were willing, in the cognitive condition. This finding is based on an extremely small sample, and the difference between groups was minimal, but this pattern warrants further examination.

Our fourth hypothesis, that socially anxious individuals who participated in a values articulation manipulation, with a values-informed rationale, would report more willingness to engage in anxiety provoking classroom activities than those receiving a cognitive restructuring manipulation with a habituation rationale and those assigned to a neutral control manipulation condition, was not supported. Although there were no significant changes in willingness to engage in academic activities, an increase was observed in the values condition and this effect was moderate to large. A similar result was found in the neutral condition. In contrast, the increase in willingness in the cognitive condition was non-significant and the effect was small. It may be that all students experienced enhanced willingness purely as a function of time. It is also possible that the brief nature of the interventions in the current study may not be powerful enough to maintain an effect after ten days. Exploration of willingness following the three conditions in the current study with a larger sample would likely enhance understanding of these preliminary results.

Finally, our fifth hypothesis, that socially anxious individuals who participated in a values articulation manipulation, with a values-informed rationale, would report a greater increase in academic values activities at ten-day follow-up than those receiving a cognitive restructuring manipulation with a habituation rationale and those assigned to a neutral control manipulation condition, was very preliminarily supported. A significant

increase in valued academic public speaking activities was found in the values condition and this analysis suggested a large effect. In contrast, a non-significant increase was observed in the cognitive condition (with a small effect), while no change was found in the neutral condition. This result is encouraging, and further supports efforts to facilitate socially anxious individuals' connection of behavior with personally held values (Dalrymple & Herbert, 2005). This hypothesis would be best if further explored with a larger sample in order to determine whether this trend will continue.

Implications

Results from the current study provide preliminary support for the role of values in models of SAD. The degree to which participants value specific academic activities predicted their willingness to engage in such activities beyond the effects of anxiety. This finding adds to the literature that has demonstrated the role of experiential avoidance in social anxiety (e.g., Glick & Orsillo, 2011; Kashdan et al., 2013; Mahaffey et al., 2013) adding empirical support to the acceptance-based model of SAD proposed by Herbert and Cardaciotto (2005).

Additionally, although findings from the intervention portion of the study were very exploratory, it appears possible that acceptance-based approaches may increase both willingness to engage in anxiety-provoking activities, as well as actual behavior. As previously discussed, acceptance-based approaches are gaining empirical support across a variety of presenting concerns (Hofmann et al., 2010; Ruiz, 2010). Acceptance as a treatment for social anxiety appears well suited for a number of theoretical reasons. Once socially anxious individuals' awareness of, and attention to, anxious thoughts and feelings heighten, low levels of self-compassion and acceptance engender efforts to

experientially avoid or control internal experiences (Herbert & Cardaciotto, 2005).

ABBTs targeting experiential avoidance encourage individuals to remain in contact with distressing thoughts, feelings, and sensations in the service of valued life directions. Our finding that the degree to which individuals value certain activities predicts their willingness to engage in them suggests that not only would individuals with SAD benefit from treatment targeting experiential avoidance, but that these benefits may be enhanced by articulation of and focus on personally held values.

Limitations

Several limitations must be taken into consideration when interpreting study results. Most notably, results from Times 2 and 3 were severely limited by a small sample size. It is possible that more robust differences in willingness and engagement in valued activities exist following these three manipulations, but that the current sample size caused a lack of power to detect them.

As mentioned above, the brief duration of the interventions in the current study may not have been powerful enough to maintain effects at ten-day follow-up. It is possible that longer interventions would have yielded significant improvements in willingness and engagement in valued activities, as well as significant differences between groups. Goldfarb (2009) conducted a single fifteen-minute acceptance-based intervention, compared to cognitive and control interventions, but found no between group differences. The shortest ABBT intervention that has been shown to impact social anxiety was 90 minutes (Block, 2002), which was twice the time of the intervention in the current study. Moreover, not all participants in the current study “passed” the manipulation check, suggesting they may not have attended to, or understood, the

intervention. Given the small sample size, we examined the data with these participants in the sample, but that may have biased results.

Characteristics of the sample recruited for the current study must be noted as well. Psychology students at Suffolk University received course credit for completing both Times 1 and 2 of the current study, potentially influencing demand characteristics. For example, in an attempt to obtain two research credits (the number required for introductory courses) by qualifying for Time 2 of the study, students' responses could have been influenced to endorse a higher level of anxiety.

Generalizability of the current results may be limited by homogeneity of the sample. Although research indicates that social anxiety is one of the most common anxiety disorders in adult clinical populations, affecting approximately fifteen million adults (Kessler et al., 2005), and that public speaking and speaking up in a meeting or class are the most frequently endorsed social fears, reported by approximately of the 20% of the general population (Ruscio et al., 2008), the use of college-aged students in the current study prevents generalization of treatment efficacy to other age groups. The current sample was also homogeneous with respect to gender (74% female) and race (66% self-identified as White or Caucasian). While it has been documented that anxiety disorders, including SAD, are more prevalent in women than in men, an area of future research is examining the efficacy of acceptance-based interventions in a sample with a greater balance of genders. Additionally, cultural processes are likely to influence the experience of social anxiety and thus impact response to interventions. In fact, a review by Hofmann, Asaani, and Hinton (2010) found that prevalence and expression of social anxiety depend heavily on culture. Our use of a largely homogenous college student

sample limits our ability to generalize study findings to diverse age, gender, and racial groups.

Also, the generalizability of our sample may have been limited by the fact that we specifically advertised for participants who self-identified as struggling with public speaking anxiety. Our results from Time 1 may have been different if we had not mentioned public speaking anxiety in our advertisement for the study. However, it is important to note that we did have a wide range of anxiety in our Time 1 sample with 44% of participants falling below the threshold for public speaking anxiety. It is also possible that some students with significant social anxiety may have avoided participation in the current study.

Similarly, it is possible that the subsample of participants who completed Time 2 were different in some important ways from our Time 1 sample. Interestingly, completers actually reported more public speaking anxiety than non-completers, which may suggest that public speaking anxiety was not underrepresented in our Time 2 sample. However, the samples could have differed on unmeasured characteristics, which could threaten the generalizability of the findings.

Finally, generalizability of the results of the current study may be further limited by our use of a sample of individuals with public speaking fears. Although these fears are the most frequently endorsed social fears (Ruscio et al., 2008), they are not the only fears reported by individuals with SAD. Thus, future research would do well to examine acceptance-based approaches for SAD within a sample endorsing a wider range of fears.

Future Directions

This study adds to the growing body of research examining acceptance-based approaches for SAD. Despite limitations, our findings suggest that values play an important role in models of SAD and willingness to engage in anxiety-provoking activities, and are thus worthy of future exploration. Future studies can build on the current work by recruiting larger samples as well as those with greater diversity in age, gender, and race. Future studies may also consider investigating acceptance-based approaches for socially anxious individuals who endorse a wide range of fears. With respect to study design, future research would likely benefit from implementing interventions that are not brief in nature and examining their effect, both immediately post-intervention and at follow-up on willingness and engagement in valued activities.

Given the popularity of acceptance and mindfulness-based treatments in both clinical and research settings, the emerging efficacy of acceptance-based approaches for SAD is significant. Given the importance of evidence-based treatments, augmenting the empirical evidence for acceptance-based treatments for SAD would provide clinicians a second empirically supported treatment for SAD, allowing second and third wave clinicians to become competent in the treatment of socially anxious individuals. Future research should continue to examine specific mechanisms underlying the efficacy of ABBTs to determine the contributions of both acceptance-based strategies and values articulation. Moreover, more studies need to compare ABBT to CBT to better understand their relative efficacy. Continued refinement of treatment options increases the likelihood that those who are socially anxious will become better equipped to engage in treatment and prevent negative consequences of the disorder.

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APPENDIX A

Review of SAD Treatment Studies

At present, four studies have investigated acceptance-based group treatments for SAD (Block & Wulfert, 2000; England et al., 2012; Kocovski, Fleming & Rector, 2009; Ossman et al., 2006) and one study examined an individual approach (Dalrymple & Herbert, 2007).

Each study developed a treatment protocol based on the core processes and therapeutic strategies of Acceptance and Commitment Therapy (ACT; Hayes et al., 1999, 2012) although there is considerable variability in the strategies used to help clients articulate and engage in valued actions. Some also incorporated elements of Mindfulness-Based Cognitive Therapy (MBCT; Segal et al., 2002) and exposure therapy (e.g., Kocovski et al., 2009; Dalrymple & Herbert, 2007).

Kocovski and colleagues (2009) investigated the impact of a 12-session group ABBT for SAD in an open trial for adult outpatients in an anxiety disorders clinic. Their Mindfulness and Acceptance-Based Group Therapy (MAGT) incorporated central concepts of ACT, including a substantial focus on values and a particular focus on mindfulness.

The third session of MAGT focuses on values, particularly defining them and differentiating them from goals (N. Kocovski, personal communication, August 8, 2011). Participants engage in a variation of the exercise *What Do You Want Your Life to Stand For?* and use a Values and Goals Worksheet to articulate their values. Participants are instructed to choose from among ten defined Life Areas and identify their values, short term and long term goals with respect to this area. For example, a participant might

choose the Life Area of Friendships/Social Life. He could then clarify his value as being a supportive friend and a good listener. A short term goal might include talking to one friend every day, while a long term goal might be to spend more time with friends.

Values continue to be discussed through the remainder of treatment sessions. For example, the concept of willingness is introduced in session 5 and defined as being open to “experience your own experience as it is, directly, without trying to manipulate it, avoid it, escape it, or change it” (N. Kocovski, August 8, 2011, p. 35). This is further clarified by the notion that willingness does not imply liking or wanting something, but rather allowing its existence, “in order to do something that you value” (N. Kocovski, August 8, 2011, p. 35).

Central to this treatment is what the authors describe as “ACT-consistent exposures.” Toward the beginning of treatment, participants create lists of activities they would like to complete and the degree of anxiety associated with each activity. As treatment progresses and participants engage in activities from their lists, they are encouraged to remind themselves of the value that is consistent with each activity.

It is clear that MAGT emphasizes the articulation of personally meaningful values and concrete treatment elements designed to maintain values as part of participants’ ongoing treatment. It is less clear, however, why the authors chose a checklist for articulating values versus a more in-depth approach, such as writing about one’s values (Roemer & Orsillo, 2009).

Those who completed MAGT reported significant reductions in self-reports of social anxiety symptoms, depression, and rumination and significant increases in mindfulness and acceptance, which were maintained at 3-month follow-up (Kocovski et

al., 2009). Analyses of the intent-to-treat group showed similar changes, although it is notable that 31% of participants dropped out of the study. One major shortcoming of this study was the absence of a comparison or control condition. Further, the impact of treatment on engagement in valued actions, quality of life, or satisfaction with life was not assessed.

Ossman and colleagues (2006) also conducted an open trial examining the impact of a group implementation of an acceptance-based approach for SAD. The 10-session treatment incorporated central ACT and mindfulness techniques. It is unclear precisely what values exercises or techniques were utilized other than a modified version of the Valued Living Questionnaire (VLQ; Wilson, 2002; Wilson & Murrell, 2004). From the fourth session through the end of treatment, participants were asked to give weekly ratings of their level of effectiveness (but surprisingly not their engagement) in the ten life domains of the VLQ (Ossman et al., 2006). Participants engaged in exposures from an acceptance-based perspective; specifically, exposures were intended to enhance flexibility of responding to aversive experiences and emphasize responses aligned with participants' values (Ossman et al., 2006). However, exposures were created using social situations that were rated as anxiety-provoking, rather than from activities specifically valued by participants.

Treatment completers demonstrated significant decreases on self-report measures of social anxiety symptoms and experiential avoidance and these effects were maintained at a 3-month follow-up (Ossman et al., 2006). At follow-up, significant increases were shown in self-report of personal effectiveness in pursuing the value of Friendships and Social Relationships (Ossman et al., 2006). This domain was the only one analyzed due

to its reported significance to all participants and its relevance to social anxiety. Although the results from the intent to treat group were similar, the study suffered from a significant drop-out rate of 45% (of those who initiated treatment), which significantly limits the generalizability of the findings. Moreover, this study is similarly limited by the use of an open trial design.

Dalrymple and Herbert (2007) investigated the impact of an individual implementation of an acceptance-based approach to SAD for adults. Basic ACT concepts, as well as mindfulness, were incorporated into twelve sessions, with two sessions specifically designated for values work. A version of the exercise *What Do You Want Your Life to Stand For?* was utilized to facilitate the clarification of personal values; the concept of engaging in valued actions in spite of negative thoughts and feelings was introduced earlier in treatment, in the context of providing a rationale for engaging in anxiety-provoking situations involved in exposure exercises. Specifically, exposures were described as opportunities to practice behaviors consistent with one's values and goals and to simultaneously notice distressing thoughts and feelings.

Participants demonstrated significant decreases on self-report measures of severity of social anxiety symptoms and fear of negative evaluation during treatment and through the 3-month follow-up period. Participants also reported improvement on perceived quality of life and the discrepancy between stated values and behavior. Similarly positive outcomes were found on clinician ratings of severity and improvement as well as on self and observer ratings of anxiety and social skills during a behavioral assessment.

However, it is important to note that slightly less than 1/3 of participants dropped out before beginning treatment and an additional 13% dropped out during treatment, severely limiting the generalizability of the findings and raising concerns about the acceptability of the treatment. Moreover, the open trial design threatens the internal validity of the findings.

Three studies have examined the efficacy of an ABBT for SAD relative to a comparison treatment. Block and Wulfert (2000) compared outcomes of an ACT-based group treatment and a CBGT-based treatment for socially anxious college students with a fear of public speaking (Block, 2002). The two active treatments were also compared to a no-treatment control group. The ACT protocol incorporated central concepts of ACT into a condensed group treatment of three 90-minute sessions. Acceptance-related concepts (e.g., willingness to experience anxiety) comprised the majority of the protocol, with a minor focus on values. It seems likely that psychoeducation about values was provided to facilitate a homework assignment after the first session in which participants were to consider valued goals they aspired to work toward and to expand their willingness to engage in feared and previously avoided activities in the service of pursuing these specified goals. Exposures employed an acceptance-based approach by focusing participants on their present moment internal experiences and facilitating their willingness to experience these signs of anxiety while continuing to engage in the exposure activity.

Participants in both the ACT and CBGT groups demonstrated improvements on self-report measures of social anxiety, willingness to engage in feared activities, and life satisfaction compared to the no-treatment group (Block, 2002). When the two active

treatments were compared, however, the only difference found was on the behavioral measure of avoidance, with participants in the ACT group demonstrating greater decreases in behavioral avoidance than those in the CBGT group. Self-report of willingness appeared to slightly favor ACT at post-treatment and especially at 1-month follow-up, while self-report of social anxiety symptoms slightly favored CBGT. Surprisingly, ACT participants did not report significant changes in life satisfaction compared to the no-treatment control group or CBGT.

One major limitation to this study was that values articulation did not seem to be effectively integrated into the exposures. Outside of sessions, participants generated lists of opportunities for public speaking in their lives and were instructed to engage in one per week. It is not clear that these assignments were linked in any way with personally valued goals. The identification of personally meaningful values can provide motivation for the difficult work of psychological treatment (Wilson & Murrell, 2004). Consequently, it would seem best to instruct participants to articulate their values before engaging in anxiety provoking tasks.

England and colleagues (2012) compared the efficacy of an acceptance-based exposure (ABE) group therapy to habituation-based exposure (HBE) group therapy for public speaking anxiety in a clinical population (England, 2010). The sample included 45 individuals who met criteria for SAD, 35 of whom were considered treatment completers (i.e., attended at least three of six sessions and completed at least part of the 6-week follow-up measures). Treatment consisted of six 2-hour group sessions. In the ABE group techniques were included to foster acceptance and practice mindfulness meditation in the service of engaging in valued public speaking activities (exposures). As part of the

rationale for treatment, psychoeducation in the first session included the concept of engaging in treatment in order to live according to one's values (England, 2010). Specifically, participants were taught to view exposures as opportunities to pursue and achieve valued goals and thus they were encouraged to engage in willingness in order to promote engaging in exposures. The majority of time in remaining sessions was devoted to *in vivo* exposures, with a smaller portion of time (approximately 30 minutes per session) designated for review of key concepts, mindfulness meditation, and review/assignment of homework.

At 6-week follow-up, significant improvements were found across groups on self-reported public speaking anxiety. Moreover, none of the participants in the ABE condition ($n = 21$) met criteria for SAD any longer, compared with 17% (4 of 21 participants) in the HBE condition (England et al., 2012). No other significant differences were found between the two groups on outcome measures.

One limitation of the study was that although a values rationale was presented for exposure in the ABE group, no specific values articulation strategies were utilized. Participants were asked to develop a hierarchy of feared public speaking activities that were "personally relevant" (England, p. 105, 2010); however, the treatment did not provide a context in which they could first identify the personally meaningful values to which these public speaking activities related. Another notable shortcoming is that England and colleagues (2012) did not include any measure to assess the impact of treatment on engagement in valued actions or quality of life.

Kocovski and colleagues (2013) followed their pilot study with a randomized controlled trial of MAGT compared to CBGT as well as a waitlist control group. One

hundred thirty-seven individuals with a principal diagnosis of SAD were randomly assigned to MAGT, CBGT, or waitlist control. Three stratification variables were included: age, gender, and social anxiety severity. Treatment consisted of 12 weekly 2-hour sessions and a 3-month follow-up check-in session. The first session of MAGT consisted of an introduction to the ACT model and a mindful eating exercise. Remaining sessions included mindfulness exercises, concepts of acceptance, cost of control/experiential avoidance, defusion, and willingness. Values and goals were introduced between sessions two through six. Sessions seven through 11 included exposure with an acceptance rationale.

At posttreatment, participants in MAGT and CBGT did as well, on average, as one another and maintained their gains at the 3-month follow-up (Kocovski et al., 2013). One-third of the full sample met criteria for clinically significant change, with no differences across the active treatment groups. Contrary to expectations, participants in MAGT did not demonstrate greater improvement in valued living compared to CBGT. Significant increases in mindfulness and acceptance were found in both MAGT and CBGT, and a significant decrease in rumination was demonstrated in both active treatments.

The authors note a significant degree of attrition as a main limitation (Kocovski et al., 2013). Specifically, 30% of the MAGT group and 40% of the CBGT group and the authors note that these rates are not significantly different from one another. Another likely limitation is the timing and method of introducing the concepts of values and valued living. Although not stated explicitly in this article, it seems probable that these concepts were introduced in session five, utilizing a checklist, since the authors note that

they used the unpublished MAGT manual referenced in the pilot study above (Kocovski, Fleming, & Rector, 2009). As such, it appears to remain a limitation of this approach that a checklist for articulating values was used rather than a more in-depth approach, such as writing about one's values (Roemer & Orsillo, 2009).

Summary

Half of the research to date examining ABBTs to treat SAD has come from open trials, thus the lack of comparison groups in three (i.e., Dalrymple & Herbert, 2007; Kocovski, Fleming, & Rector, 2009; Ossman et al., 2006) of six studies is notable. While Block and Wulfert (2000) did utilize a comparison group in their controlled trial of an acceptance-based approach to SAD, their sample was very small, containing only 7 participants in the two interventions. England and colleagues' (2012) sample was considerably larger, however, the authors noted that statistical power was a limitation and that the possibility existed that significant effects were not detected as a result. This is an important limitation, as CBT approaches have demonstrated efficacy in reducing social anxiety symptoms (e.g., Heimberg & Becker, 2002). Further, given that all of the studies described above incorporated specific behavioral strategies (such as exposure therapy) into ABBT for SAD, research is needed to explore the specific, unique contributions of acceptance and values strategies.

While the six aforementioned studies incorporated a relatively consistent focus on acceptance and mindfulness, the values component in each protocol varied widely. The time at which values work was introduced varied, as did the extent to which an individual's personally meaningful values were articulated and then related to exposures. Connecting one's behavior to personally valued life directions is likely to augment an

individual's willingness to experience anxiety (Dalrymple & Herbert, 2007). Further, as Wilson and Murrell (2004) note, identifying one's values can provide motivation to engage in psychological treatment. This may be why the drop-out rates in the ABBT for SAD studies were similar to those found with CBT. Consequently, research examining the relative efficacy of a values enhanced ABBT intervention compared to a CBT approach is sorely needed.

A single case study of an ABBT approach to SAD was conducted in a college counseling center setting (Brady & Whitman, 2012). The client attended 18 sessions of psychotherapy over a five month period. ACT principles guided session material and concepts included cognitive defusion, present-moment awareness, acceptance, self as context, and values/committed action. Brady and Whitman (2012) note that values were introduced and defined in the 12th session, utilizing the VLQ. Administration of this measure was followed by "setting commitments for future behaviors" (Brady & Whitman, p. 92, 2012) in order to augment the client's capacity to live a values-consistent life. The authors note that it may have been more useful to introduce values earlier in treatment, rather than focusing on symptom reduction (contrary to the typical target of ABBTs). Specifically, they state that clarifying client-defined values as the outset of treatment would have reduce the likelihood of the therapist making faulty assumptions about the client's desired directions in treatment (Brady & Whitman, 2012). The authors report that the client made significant progress in treatment, though they do not report specifics other than an improved Global Assessment of Functioning (GAF) from 65 to 85. They note that the client developed an enhanced flexibility in responding to anxiety, as well as gaining clarity about his identity and desires in life (Brady &

Whitman, 2012). This case study appears to bolster support for the relevance and feasibility of ABBTs for SAD in a college student population, as well as highlight the need for more in-depth investigation of clinically relevant values articulation methods.

APPENDIX B

Review of Experimental Studies of Values Interventions

Although much of the research demonstrating the potential benefits of values articulation has been conducted in the context of treatment outcome studies, there are also a number of laboratory-based experiments conducted to investigate this potential mechanism of ABBT. Some laboratory studies have shown that providing a values rationale for experiencing physical pain increases pain tolerance (Branstetter-Rost, Cushing, & Douleh, 2009; Gutiérrez et al., 2004; Páez-Blarrina et al., 2008). For example, Gutiérrez and colleagues (2004) found that when they created a motivational context by connecting pain tolerance with a valuable goal (i.e., helping experimenters learn more about chronic pain), participants' willingness to engage in a pain task was greater. The clinical validity of this values task is limited, however, given that it reflects the experimenter's goal, rather than the participants' personal values. Articulating one's values in the context of an experimental study has been shown to produce positive outcomes such as decreased bias in interpreting threatening information (Cohen, Aronson, & Steele, 2000, Study 1), increased acceptance of threatening health information (Harris & Napper, 2005), and a reduced physiological response to stress (Creswell, Welch, Taylor, Sherman, Gruenewald, & Mann, 2005). However, there are methodological inconsistencies in the methods used to elicit values within this literature, making it difficult to interpret the findings. For example, some studies instruct participants to indicate which value from a list is most personally important (e.g., Creswell et al., 2005; McQueen & Klein, 2006), while others have used more clinically

relevant writing tasks (Cohen et al., 2000, Study 1; Harris & Napper, 2005). Many of these studies confound values articulation with the elicitation of positive mood by explicitly instructing participants to write about positive experiences with their values. For example, Cohen and colleagues (2000, Study 1) instructed participants to describe personal experiences in which their most highly rated value had been important to them and had made them feel good about themselves. Thus the beneficial effects of values writing in these studies could be due to values articulation or simply the elicitation of positive mood.

APPENDIX C

Measures

Demographics

1. What is your current age? (Write in age)

2. What is your biological sex?
 - a. Male
 - b. Female
 - c. Intersex
3. How would you identify your race?
4. How would you identify your ethnicity?
5. How would you identify your sexual orientation?

Personal Report of Confidence as a Speaker (PRCS)

The next 30 questions ask about your feelings of confidence as a speaker. After each question there is a “true” and a “false.” Try to decide whether “true” or “false” *most* represents your feelings associated with your *most* recent speech.

1. I look forward to an opportunity to speak in public.
 - a. TRUE
 - b. FALSE
2. My hands tremble when I try to handle objects on the platform.
 - a. TRUE
 - b. FALSE
3. I am in constant fear of forgetting my speech.
 - a. TRUE
 - b. FALSE
4. Audiences seem friendly when I address them.
 - a. TRUE
 - b. FALSE
5. While preparing a speech I am in a constant state of anxiety.
 - a. TRUE
 - b. FALSE

6. At the conclusion of a speech I feel that I have had a pleasant experience.
- a. TRUE
 - b. FALSE
7. I dislike to use my body and voice expressively.
- a. TRUE
 - b. FALSE
8. My thoughts become confused and jumbled when I speak before an audience.
- a. TRUE
 - b. FALSE
9. I have no fear of facing an audience.
- a. TRUE
 - b. FALSE
10. Although I am nervous just before getting up I soon forget my fears and enjoy the experience.
- a. TRUE
 - b. FALSE
11. I face the prospect of making a speech with complete confidence.
- a. TRUE
 - b. FALSE
12. I feel that I am in complete possession of myself while speaking.
- a. TRUE
 - b. FALSE
13. I prefer to have notes on the platform in case I forget my speech.
- A. TRUE
 - B. FALSE
14. I like to observe the reactions of my audience to my speech.
- A. TRUE

B. FALSE

15. Although I talk fluently with friends I am at a loss for words on the platform.

A. TRUE

B. FALSE

16. I feel relaxed and comfortable while speaking.

A. TRUE

B. FALSE

17. Although I do not enjoy speaking in public I do not particularly dread it.

A. TRUE

B. FALSE

18. I always avoid speaking in public if possible.

A. TRUE

B. FALSE

19. The faces of my audience are blurred when I look at them.

A. TRUE

B. FALSE

20. I feel disgusted with myself after trying to address a group of people.

A. TRUE

B. FALSE

21. I enjoy preparing a talk.

A. TRUE

B. FALSE

22. My mind is clear when I face an audience.

- A. TRUE
- B. FALSE

23. I am fairly fluent.

- A. TRUE
- B. FALSE

24. I perspire and tremble just before getting up to speak.

- A. TRUE
- B. FALSE

25. My posture feels strained and unnatural.

- A. TRUE
- B. FALSE

26. I am fearful and tense all the while I am speaking before a group of people.

- A. TRUE
- B. FALSE

27. I find the prospect of speaking mildly pleasant.

- A. TRUE
- B. FALSE

28. It is difficult for me to search my mind calmly for the right words to express my thoughts.

- A. TRUE
- B. FALSE

29. I am terrified at the thought of speaking before a group of people.

- A. TRUE
- B. FALSE

30. I have a feeling of alertness in facing an audience.

- A. TRUE
- B. FALSE

Social Phobia Anxiety Inventory (SPAI-23)

1. I feel anxious when entering social situations where there is a small group.
 - a. Never
 - b. Very Infrequent
 - c. Sometimes
 - d. Very Frequent
 - e. Always
2. I feel anxious when entering social situations where there is a large group.
 - a. Never
 - b. Very Infrequent
 - c. Sometimes
 - d. Very Frequent
 - e. Always
3. I feel anxious when I am in a social situation and I am expected to engage in some activity.
 - a. Never
 - b. Very Infrequent
 - c. Sometimes
 - d. Very Frequent
 - e. Always
4. I feel anxious when speaking in a small informal meeting.
 - a. Never
 - b. Very Infrequent
 - c. Sometimes
 - d. Very Frequent
 - e. Always
5. I feel anxious when making a speech in front of an audience.
 - a. Never

- b. Very Infrequent
 - c. Sometimes
 - d. Very Frequent
 - e. Always
6. I feel anxious when in a small gathering with other people.
- a. Never
 - b. Very Infrequent
 - c. Sometimes
 - d. Very Frequent
 - e. Always
7. I feel anxious when in a large gathering with other people
- a. Never
 - b. Very Infrequent
 - c. Sometimes
 - d. Very Frequent
 - e. Always
8. I feel anxious when in a bar or restaurant with other people.
- a. Never
 - b. Very Infrequent
 - c. Sometimes
 - d. Very Frequent
 - e. Always
9. I feel anxious and I do not know what to do when in a new situation with other people.
- a. Never
 - b. Very Infrequent
 - c. Sometimes
 - d. Very Frequent
 - e. Always
10. I feel anxious when stating an opinion to other people.
- a. Never
 - b. Very Infrequent
 - c. Sometimes
 - d. Very Frequent
 - e. Always
11. I feel anxious when talking about business with other people.
- a. Never
 - b. Very Infrequent
 - c. Sometimes

- d. Very Frequent
- e. Always

12. I feel anxious when approaching and/or initiating a conversation with other people.

- a. Never
- b. Very Infrequent
- c. Sometimes
- d. Very Frequent
- e. Always

13. I feel anxious when having to interact for longer than a few minutes with other people.

- a. Never
- b. Very Infrequent
- c. Sometimes
- d. Very Frequent
- e. Always

14. I feel anxious when speaking in front of other people.

- a. Never
- b. Very Infrequent
- c. Sometimes
- d. Very Frequent
- e. Always

15. I feel anxious before entering a social situation.

- a. Never
- b. Very Infrequent
- c. Sometimes
- d. Very Frequent
- e. Always

16. I experience troublesome thoughts when I am in a social setting.

- a. Never
- b. Very Infrequent
- c. Sometimes
- d. Very Frequent
- e. Always

17. I feel anxious when I am on any form of public transportation (e.g., bus, train, airplane).

- a. Never
- b. Very Infrequent
- c. Sometimes

- d. Very Frequent
- e. Always

18. I feel anxious when crossing streets.

- a. Never
- b. Very Infrequent
- c. Sometimes
- d. Very Frequent
- e. Always

19. I feel anxious when I am in crowded public places (e.g., stores, church, movies, restaurants).

- a. Never
- b. Very Infrequent
- c. Sometimes
- d. Very Frequent
- e. Always

20. Being in large open spaces makes me feel anxious.

- a. Never
- b. Very Infrequent
- c. Sometimes
- d. Very Frequent
- e. Always

21. I feel anxious when I am enclosed in places (e.g., elevators, tunnels).

- a. Never
- b. Very Infrequent
- c. Sometimes
- d. Very Frequent
- e. Always

22. I feel anxious when riding in a car.

- a. Never
- b. Very Infrequent
- c. Sometimes
- d. Very Frequent
- e. Always

23. There are certain places I do not go to because I may feel trapped.

- a. Never
- b. Very Infrequent
- c. Sometimes
- d. Very Frequent
- e. Always

Academic Valued Action Questionnaire (AVAQ)

The following activities are often part of the college experience. Please consider your own personal values and rate how important you think each of these activities is to your educational, professional, and personal development.

1. Raising my hand when I have a question during class.
 - a. Not at all important
 - b. Somewhat unimportant
 - c. Neutral
 - d. Somewhat Important
 - e. Very Important
2. Raising my hand to volunteer answers in class.
 - a. Not at all important
 - b. Somewhat unimportant
 - c. Neutral
 - d. Somewhat Important
 - e. Very Important
3. Talking to professors (or TAs) during office hours.
 - a. Not at all important
 - b. Somewhat unimportant
 - c. Neutral
 - d. Somewhat Important
 - e. Very Important
4. Working on group projects with students in my classes who are unfamiliar to me.
 - a. Not at all important
 - b. Somewhat unimportant
 - c. Neutral
 - d. Somewhat Important
 - e. Very Important
5. Giving presentations in class.
 - a. Not at all important
 - b. Somewhat unimportant
 - c. Neutral
 - d. Somewhat Important
 - e. Very Important

Willingness Questionnaire (WQ)

The next 5 questions ask how willing you have been to do certain things during the **past ten days**.

1. During the **past ten days**, how willing were you to raise your hand to ask a question in class?
 - a. 0 – Completely unwilling
 - b. 1
 - c. 2 – Somewhat unwilling
 - d. 3
 - e. 4 – Moderately willing
 - f. 5
 - g. 6 – Somewhat willing
 - h. 7
 - i. 8 – Completely willing

2. During the **past ten days**, how willing were you to raise your hand to volunteer an answer in class?
 - a. 0 – Completely unwilling
 - b. 1
 - c. 2 – Somewhat unwilling
 - d. 3
 - e. 4 – Moderately willing
 - f. 5
 - g. 6 – Somewhat willing
 - h. 7
 - i. 8 – Completely willing

3. During the **past ten days**, how willing were you to give a presentation in class?
 - a. 0 – Completely unwilling
 - b. 1
 - c. 2 – Somewhat unwilling
 - d. 3
 - e. 4 – Moderately willing
 - f. 5
 - g. 6 – Somewhat willing
 - h. 7
 - i. 8 – Completely willing

4. During the **past ten days**, how willing were you to approach a professor (or TA) individually during office hours?
 - a. 0 – Completely unwilling

- b. 1
- c. 2 – Somewhat unwilling
- d. 3
- e. 4 – Moderately willing
- f. 5
- g. 6 – Somewhat willing
- h. 7
- i. 8 – Completely willing

5. During the **past ten days**, how willing were you to work on a group project with students in your class who are unfamiliar to you?

- a. 0 – Completely unwilling
- b. 1
- c. 2 – Somewhat unwilling
- d. 3
- e. 4 – Moderately willing
- f. 5
- g. 6 – Somewhat willing
- h. 7
- i. 8 – Completely willing

Self-Report of Public Speaking Behaviors (SPSB)

The next 5 questions ask about your behavior during the **past ten days**.

1. During the **past ten days** how many times did you raise your hand to ask a question in class?
 - a. 1
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. More than 5 times

2. During the **past ten days**, how many times did you raise your hand to volunteer an answer in class?
 - a. 1
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. More than 5 times

3. During the **past ten days**, how many times did you give a presentation in class?
 - a. 1
 - b. 2

- c. 3
- d. 4
- e. 5
- f. More than 5 times

4. During the **past ten days**, how many times did you approach a professor (or TA) individually during office hours?

- a. 1
- b. 2
- c. 3
- d. 4
- e. 5
- f. More than 5 times

5. During the **past ten days**, how many times did you speak to students in your class who are unfamiliar to you?

- a. 1
- b. 2
- c. 3
- d. 4
- e. 5
- f. More than 5 times

APPENDIX D

Recruitment Materials

D1. Flyer to Recruit for Time I at Suffolk University

Public Speaking Anxiety Study



**Do you get nervous about speaking in class?
Are you 18 or older and interested in participating in research?**

**Receive 1 research hour for completing an online survey!
You may also be eligible to participate in a second study and
potentially receive 1 *additional* hour for participation, and up to \$20 in
Amazon gift cards!**

**Find it on SONA:
An Investigation of Fears Related to Public Speaking**

An Investigation of Fears Related to Public Speaking http://suffolk.sona-systems.com email: PSAnxiety.study@gmail.com	An Investigation of Fears Related to Public Speaking http://suffolk.sona-systems.com email: PSAnxiety.study@gmail.com	An Investigation of Fears Related to Public Speaking http://suffolk.sona-systems.com email: PSAnxiety.study@gmail.com	An Investigation of Fears Related to Public Speaking http://suffolk.sona-systems.com email: PSAnxiety.study@gmail.com	An Investigation of Fears Related to Public Speaking http://suffolk.sona-systems.com email: PSAnxiety.study@gmail.com	An Investigation of Fears Related to Public Speaking http://suffolk.sona-systems.com email: PSAnxiety.study@gmail.com
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Public Speaking Anxiety Study



**Do you get nervous about speaking in class?
Are you 18 or older and interested in participating in research?**

**Receive a \$10 Amazon gift card for completing an online survey!
You may also be eligible to participate in a second study at Suffolk
University and potentially receive up to \$30 more in Amazon gift cards!**

An Investigation of Fears Related to Public Speaking https://www.surveymonkey.com/s/DRSVSY6	An Investigation of Fears Related to Public Speaking https://www.surveymonkey.com/s/DRSVSY6	An Investigation of Fears Related to Public Speaking https://www.surveymonkey.com/s/DRSVSY6	An Investigation of Fears Related to Public Speaking https://www.surveymonkey.com/s/DRSVSY6	An Investigation of Fears Related to Public Speaking https://www.surveymonkey.com/s/DRSVSY6	An Investigation of Fears Related to Public Speaking https://www.surveymonkey.com/s/DRSVSY6
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D3. Online Script to Recruit for Times 2 and 3

Depending on how you responded to these questionnaires, you may be eligible to participate in a second study on public speaking anxiety. Research has shown that anxiety in social and public speaking situations is very common in college students. The purpose of this study is to understand what might help students feel more comfortable facing the situations that make them anxious. Participation in the next part of the study would require you to come to our research lab for an appointment that would last up to one hour. One of the researchers on the study will go over the details of the study and then ask you to sign a consent form. The experiment will include relaxing for a few minutes and then listening to one of three recordings that will ask you to think and write about your anxiety from different perspectives. If you are a Suffolk student, you'll receive one hour of research credit for participating in this part of the study, in addition to the hour of credit you already received for completing these questionnaires online. If you are a student at another school, you will receive a \$10 Amazon gift card for this part of the study, in addition to the \$10 Amazon gift card you receive for completing these questionnaires online. Regardless of your school, you will also receive a \$10 Amazon gift card once you complete the questionnaires (and another \$10 gift card if you complete your questionnaires within 24 hours of receiving them).

Your willingness to be contacted for the second study does not affect whether you receive credit for participating in this first study. You have completed this study and therefore will receive credit.

Would you be interested in learning more about this second study if you are eligible?

Yes ____ No ____

What is the best phone number for us to call to get in touch with you to schedule an appointment?

D4. Phone script to recruit Suffolk students for Times 2 and 3

Hi, my name is _____ and I am a researcher/research assistant in the Psychology Department at Suffolk University. You recently completed some questionnaires related to your values and social anxiety, and you indicated that you would be interested in hearing about another research opportunity. Are you still interested in hearing about that opportunity? If so, do you have a few minutes for me to describe it to you?

Yes _____

No _____

Research has shown that anxiety in social and public speaking situations is very common in college students. The purpose of this study is to understand what might help students feel more comfortable facing the situations that make them anxious. Participation in the study would require you to come to our research lab for an appointment that would last up to one hour and to complete some questionnaires online one week later. In the research lab, you would be asked to relax for a few minutes and then listen to one of three recordings that may ask you to think and write about your anxiety from a different perspective. Ten days after coming to the lab, you will receive an email that will direct you to a Survey Monkey link with follow-up questions for you to fill out online. These questions will take you up to an hour to complete. You'll receive one hour of research credit and a \$10 Amazon gift card after you fully complete the study (with another \$10 gift card if you complete your questionnaires within 24 hours of receiving them), in addition to the hour of credit you already received for completing the questionnaires online.

Are you interested in our study? If so, would you like to schedule your visit to our lab?

Visit: Date _____ Time _____

D5. Phone script to recruit non-Suffolk students for Times 2 and 3

Hi, my name is _____ and I am a researcher/research assistant in the Psychology Department at Suffolk University. You recently completed some questionnaires related to your values and social anxiety, and you indicated that you would be interested in hearing about another research opportunity. Are you are still interested in hearing about that opportunity? If so, do you have a few minutes for me to describe it to you?

Yes _____

No _____

Research has shown that anxiety in social and public speaking situations is very common in college students. The purpose of this study is to understand what might help students feel more comfortable facing the situations that make them anxious. Participation in the study would require you to come to our research lab for an appointment that would last up to one hour and to complete some questionnaires online one week later. In the research lab, you would be asked to relax for a few minutes and then listen to one of three recordings that may ask you to think and write about your anxiety from a different perspective. Ten days after coming to the lab, you will receive an email that will direct you to a Survey Monkey link with follow-up questions for you to fill out online. These questions will take you up to an hour to complete. You'll receive a \$10 Amazon gift card for the lab portion of the study and another \$10 Amazon gift card after you fully complete the follow-up questions online (with another \$10 gift card if you complete your questionnaires within 24 hours of receiving them), in addition to the \$10 Amazon gift card you already received for completing the questionnaires online. Are you interested in our study? If so, would you like to schedule your visit to our lab?

Visit:

Date _____

Time _____

APPENDIX E
Informed Consent Forms

E1. Informed Consent Form for Time I – All Participants

TITLE: An Investigation of Fears Related to Public Speaking

PRINCIPAL INVESTIGATOR: Susan M. Orsillo, Ph.D.
sorsillo@suffolk.edu
617-305-1924

CO-INVESTIGATOR: Aviva M. Katz, M.A.
amkatz@suffolk.edu
617-840-8317

The following information describes the research study you are being asked to participate in. Please read this form carefully as it provides important information about participating in this research study. You have the right to take your time in making this decision and ask all the questions necessary to be fully informed about your participation. If you decide to participate in this research study, you will be asked to sign this form. You will be given a copy of this form for your records.

PURPOSE OF STUDY:

You are being asked to participate in a research study. The purpose of this research study is to better understand public speaking anxiety in college students. We aim to learn more about the factors that cause and maintain public speaking anxiety, as well as its consequences. You are being invited to participate in this study because you expressed interest in participating in research on related to public speaking anxiety. We expect to enroll 200 participants for this study.

RESEARCH PROCEDURES:

If you decide to take part in this research study, you will be asked to complete a brief set of questionnaires that will take no longer than 60 minutes to complete. These questionnaires will ask you to provide some demographic information about yourself and to answer some questions about anxiety and things that are important to you. Your involvement in this study will include completing one online questionnaire. This will take up to 60 minutes. All participants will be asked to complete the same set of questionnaires. You can decide to stop at any time.

RISKS AND/OR DISCOMFORTS:

There are some anticipated risks and/or discomforts resulting from your participation in this study. These risks and/or discomforts include that you may find some of the questions that you will be asked are personal or upsetting. You may also find the questions boring. You can choose at any time to skip a question or stop your participation in the study.

BENEFITS:

There are no known benefits to you for taking part in this study. However, we do hope that the information that we learn from this study will help us better understand public speaking anxiety among college students. Your grades will not benefit as a result of your participation in this research study.

ALTERNATIVES:

The alternative is to not participate in this study.

Suffolk University students: You do not have to participate in this research study to receive the required research credits. There are alternative methods of obtaining such credits. For example, you may participate in a different research study or complete the online research ethics training course through CITI training.

PRIVACY AND CONFIDENTIALITY:

Your privacy will be protected during this study and the confidentiality of the information will be maintained. Although your name, email address and IP address will be connected with your responses in survey monkey, once the survey is completed we will assign you a code number and remove your identifying information from the rest of your responses. A key that matches your identifying information with this code number will be kept in a locked filing cabinet in our research lab in the Suffolk University Department of Psychology. The questionnaires will be identified with a code. After you complete the questionnaires, you will be asked if you would like to be considered for an additional study for which you may be eligible.

At the completion of the study, all identifying information linked to your responses will be destroyed via permanent deleting of electronic data.

We use SSL encryption to protect the electronic transmission of your data. This is the same method that is typically used for online banking sites or other websites that transmit secured information.

We do intend to present statistics from the entire group of participants and the results of the study may be published; however, these results will not contain your name or any of your individual responses to the questions. Only averages and totals for groups of participants will be included. Five years after this data is no longer being used for research purposes, it will be destroyed via permanent deleting of electronic data.

LIMITS TO CONFIDENTIALITY:

While your privacy will be protected by all involved with the study, there are a few situations when we are required by law to share your information with others (such as police or medical personnel). They are:

- If you share with us information related to **current, ongoing** physical, sexual, or emotional abuse of minors (anyone under the age of 18), elders (those aged 60 or older), or disabled individuals
- If we believe you to be at **immediate** or **current** risk for harming yourself or a specified other person or group of people
- In the case of a medical emergency
- If the research records are subpoenaed

In these situations, the minimum amount of information necessary to maintain your safety, as well as the safety of others, will be given to the appropriate people and social service agencies.

COMPENSATION:

To compensate you for your time and participation, students in Psychology courses at Suffolk University will receive 1 research credit for your participation in this study. Students from schools other than Suffolk University will receive a \$10 Amazon gift card.

VOLUNTARY NATURE OF PARTICIPATION/ RIGHT TO WITHDRAW:

Your participation in this research is voluntary. You have the right to refuse to participate in this research study or to withdraw your consent at any time. Your withdrawal will not result in any penalties or loss of benefits and/or services you are otherwise entitled to. The researcher may withdraw you as a participant from this research study if at such time the investigators feel it is in your best interest. Your withdrawal or refusal to participate in this research study will not adversely affect your grade or standing at Suffolk University.

CONTACT INFORMATION:

If you have any questions about this study including the purpose, procedures, risks and benefits you may contact the Primary Investigator of the study, Dr. Susan M. Orsillo, E-mail: sorsillo@suffolk.edu, Voice: 617-3051924, or the student co-investigator, Aviva M. Katz, E-mail: amkatz@suffolk.edu, Voice: 617-840-8317. If you have questions about your rights as a research participant, you may contact Suffolk University's Institutional Review Board (IRB) at (617) 557-2006 or irb@suffolk.edu.

If you are ready to provide consent, please continue with this form.

If you do not provide your consent for this study and you do not wish to be contacted by us again, please click here:

If you would like to discuss the study with Dr. Orsillo or Aviva Katz before consenting, please note our contact information and exit from the survey.

PARTICIPANT CONSENT:

You have read the information in this consent including the risks and benefits. You have been given an opportunity to ask questions, and enough time to decide whether or not to participate. You voluntarily agree to participate in this research study.

.
Please sign electronically below by checking “I have read and agree to the above consent form” and entering today’s date. By signing, you also are affirming that you are at least 18 years of age and able to sign a legal document without a guardian.

Yes, I have read and agree to the above consent form

No, I don’t agree to the above consent form

Date:

[Click Here to Print copy of Informed Consent Form](#)

E2. Informed Consent Form for Times 2 and 3 – Suffolk University Participants

TITLE: An Investigation of Fears Related to Public Speaking

PRINCIPAL INVESTIGATOR: Susan M. Orsillo, Ph.D.
sorsillo@suffolk.edu
617-305-1924

CO-INVESTIGATOR: Aviva M. Katz, M.A.
amkatz@suffolk.edu
617-840-8317

The following information describes the research study you are being asked to participate in. Please read this form carefully as it provides important information about participating in this research study. You have the right to take your time in making this decision and ask all the questions necessary to be fully informed about your participation. If you decide to participate in this research study, you will be asked to sign this form. You will be given a copy of this form for your records.

PURPOSE OF STUDY:

You are being asked to participate in a research study. The purpose of this research study is to learn more about public speaking anxiety in college students and investigate different ways of reducing it. You are being invited to participate in this study because you indicated an interest in participating in a second study related to public speaking anxiety. We expect to enroll 75 participants for this study.

RESEARCH PROCEDURES:

If you decide to take part in this research study, you will be asked to sit in a recliner and listen to one of three audio recordings. The recordings may ask you to think and write about your anxiety from a different perspective. The one you will listen to will be chosen by random assignment (like using a coin flip). Ten days after this, you will be emailed a link to a brief set of online questionnaires that will take no longer than 60 minutes to complete. These questionnaires will ask you to answer some questions about anxiety and things that are important to you. Your involvement in this study will include participating in an activity in our lab. This will take up to 60 minutes. You will also be asked to complete an online questionnaire one week later that will take up to 60 minutes. You can decide to stop at any time.

RISK AND/OR DISCOMFORTS:

There are some anticipated risks and/or discomforts resulting from your participation in this study. These risks and/or discomforts include that you may find some of the questions that you will be asked are personal or upsetting. You may also find the questions boring. You may find it personal, upsetting and/or boring to listen to the recording you are assigned to listen to. You can choose at any time to skip a question or stop your participation in the study.

BENEFITS:

There are no known benefits to you for taking part in this study. However, it is possible that you will notice a decrease in your public speaking anxiety after participating in the study. Also, we hope that the information that we learn from this study will help us better understand public speaking anxiety among college students. Your grades will not benefit as a result of your participation in this research study.

ALTERNATIVES:

The alternative is to not participate in this study.

You do not have to participate in this research study to receive the required research credits. There are alternative methods of obtaining such credits.

PRIVACY AND CONFIDENTIALITY:

Your privacy will be protected during this study and the confidentiality of the information will be maintained. Although your name, email address and IP address will be connected with your responses in survey monkey, once the survey is completed we will assign you a code number and remove your identifying information from the rest of your responses. A key that matches your identifying information with this code number will be kept in a locked filing cabinet in our research lab in the Suffolk University Department of Psychology. The questionnaires will be identified with a code. After you complete the questionnaires, you will be asked if you would like to be considered for an additional study for which you may be eligible.

At the completion of the study, all identifying information linked to your responses will be destroyed via permanent deleting of electronic data.

We use SSL encryption to protect the electronic transmission of your data. This is the same method that is typically used for online banking sites or other websites that transmit secured information.

We do intend to present statistics from the entire group of participants and the results of the study may be published; however, these results will not contain your name or any of your individual responses to the questions. Only averages and totals for groups of participants will be included. Five years after this data is no longer being used for research purposes, it will be destroyed via permanent deleting of electronic data.

LIMITS TO CONFIDENTIALITY:

While your privacy will be protected by all involved with the study, there are a few situations when we are required by law to share your information with others (such as police or medical personnel). They are:

- If you share with us information related to **current, ongoing** physical, sexual, or emotional abuse of minors (anyone under the age of 18), elders (those aged 60 or older), or disabled individuals
- If we believe you to be at **immediate** or **current** risk for harming yourself or a specified other person or group of people
- In the case of a medical emergency
- If the research records are subpoenaed

In these situations, the minimum amount of information necessary to maintain your safety, as well as the safety of others, will be given to the appropriate people and social service agencies.

COMPENSATION:

To compensate you for your time and participation, as a student in a Suffolk University Psychology course you will receive 1 research credit for your participation in the lab portion of this study. Upon completing the online questionnaire, you will receive an Amazon gift card for ten dollars. If you complete the questionnaire within 24 hours of receiving it by email, you will receive an additional Amazon gift card for ten dollars. If you decide to stop participation in the study before completing the online questionnaire, you will still receive the 1 research credit, however, you will not receive Amazon gift cards.

VOLUNTARY NATURE OF PARTICIPATION/ RIGHT TO WITHDRAW:

Your participation in this research is voluntary. You have the right to refuse to participate in this research study or to withdraw your consent at any time. Your withdrawal will not result in any penalties or loss of benefits and/or services you are otherwise entitled to. The researcher may withdraw you as a participant from this research study if at such time the investigators feel it is in your best interest. Your withdrawal or refusal to participate in this research study will not adversely affect your grade or standing at Suffolk University.

CONTACT INFORMATION:

If you have any questions about this study including the purpose, procedures, risks and benefits you may contact the Primary Investigator of the study, Dr. Susan M. Orsillo, E-mail: sorsillo@suffolk.edu, Voice: 617-3051924, or the student co-investigator, Aviva M. Katz, E-mail: amkatz@suffolk.edu, Voice: 617-840-8317. If you have questions about

your rights as a research participant, you may contact Suffolk University's Institutional Review Board (IRB) at (617) 557-2006 or irb@suffolk.edu.

PARTICIPANT CONSENT:

.
If you have read this form completely and agree with the terms, please sign below and print today's date. By signing, you also are affirming that you are at least 18 years of age and able to sign a legal document without a guardian.

You have read the information in this consent including the risks and benefits. You have been given an opportunity to ask questions, and enough time to decide whether or not to participate. You voluntarily agree to participate in this research study.

Signature of Participant

Date

Printed Name of Participant

Signature of Person Obtaining Consent

Date

Printed Name of Person Obtaining Consent

E3. Informed Consent Form for Times 2 and 3 – Non-Suffolk Participants

TITLE: An Investigation of Fears Related to Public Speaking

PRINCIPAL INVESTIGATOR: Susan M. Orsillo, Ph.D.
sorsillo@suffolk.edu
617-305-1924

CO-INVESTIGATOR: Aviva M. Katz, M.A.
amkatz@suffolk.edu
617-840-8317

The following information describes the research study you are being asked to participate in. Please read this form carefully as it provides important information about participating in this research study. You have the right to take your time in making this decision and ask all the questions necessary to be fully informed about your participation. If you decide to participate in this research study, you will be asked to sign this form. You will be given a copy of this form for your records.

PURPOSE OF STUDY:

You are being asked to participate in a research study. The purpose of this research study is to learn more about public speaking anxiety in college students and investigate different ways of reducing it. You are being invited to participate in this study because you indicated an interest in participating in a second study related to public speaking anxiety. We expect to enroll 75 participants for this study.

RESEARCH PROCEDURES:

If you decide to take part in this research study, you will be asked to sit in a recliner and listen to one of three audio recordings. The recordings may ask you to think and write about your anxiety from a different perspective. The one you will listen to will be chosen by random assignment (like using a coin flip). Ten days after this, you will be emailed a link to a brief set of online questionnaires that will take no longer than 60 minutes to complete. These questionnaires will ask you to answer some questions about anxiety and things that are important to you. Your involvement in this study will include participating in an activity in our lab. This will take up to 60 minutes. You will also be asked to complete an online questionnaire one week later that will take up to 60 minutes. You can decide to stop at any time.

RISK AND/OR DISCOMFORTS:

There are some anticipated risks and/or discomforts resulting from your participation in this study. These risks and/or discomforts include that you may find some of the questions that you will be asked are personal or upsetting. You may also find the questions boring. You may find it personal, upsetting and/or boring to listen to the recording you are assigned to listen to. You can choose at any time to skip a question or stop your participation in the study.

BENEFITS:

There are no known benefits to you for taking part in this study. However, it is possible that you will notice a decrease in your public speaking anxiety after participating in the study. Also, we hope that the information that we learn from this study will help us better understand public speaking anxiety among college students. Your grades will not benefit as a result of your participation in this research study.

ALTERNATIVES:

The alternative is to not participate in this study.

PRIVACY AND CONFIDENTIALITY:

Your privacy will be protected during this study and the confidentiality of the information will be maintained. Although your name, email address and IP address will be connected with your responses in survey monkey, once the survey is completed we will assign you a code number and remove your identifying information from the rest of your responses. A key that matches your identifying information with this code number will be kept in a locked filing cabinet in our research lab in the Suffolk University Department of Psychology. The questionnaires will be identified with a code. After you complete the questionnaires, you will be asked if you would like to be considered for an additional study for which you may be eligible.

At the completion of the study, all identifying information linked to your responses will be destroyed via permanent deleting of electronic data.

We use SSL encryption to protect the electronic transmission of your data. This is the same method that is typically used for online banking sites or other websites that transmit secured information.

We do intend to present statistics from the entire group of participants and the results of the study may be published; however, these results will not contain your name or any of your individual responses to the questions. Only averages and totals for groups of participants will be included. Five years after this data is no longer being used for research purposes, it will be destroyed via permanent deleting of electronic data.

LIMITS TO CONFIDENTIALITY:

While your privacy will be protected by all involved with the study, there are a few situations when we are required by law to share your information with others (such as police or medical personnel). They are:

- If you share with us information related to **current, ongoing** physical, sexual, or emotional abuse of minors (anyone under the age of 18), elders (those aged 60 or older), or disabled individuals
- If we believe you to be at **immediate** or **current** risk for harming yourself or a specified other person or group of people
- In the case of a medical emergency
- If the research records are subpoenaed

In these situations, the minimum amount of information necessary to maintain your safety, as well as the safety of others, will be given to the appropriate people and social service agencies.

COMPENSATION:

To compensate you for your time and participation, you will receive a \$10 Amazon gift card for your participation in the lab portion of this study. Upon completing the online questionnaire, you will receive an Amazon gift card for ten dollars. If you complete the questionnaire within 24 hours of receiving it by email, you will receive an additional Amazon gift card for ten dollars. If you decide to stop participation in the study before completing the online questionnaire, you will still receive the first \$10 Amazon gift card, however, you will not receive the possible additional \$20 in Amazon gift cards.

VOLUNTARY NATURE OF PARTICIPATION/ RIGHT TO WITHDRAW:

Your participation in this research is voluntary. You have the right to refuse to participate in this research study or to withdraw your consent at any time. Your withdrawal will not result in any penalties or loss of benefits and/or services you are otherwise entitled to. The researcher may withdraw you as a participant from this research study if at such time the investigators feel it is in your best interest.

CONTACT INFORMATION:

If you have any questions about this study including the purpose, procedures, risks and benefits you may contact the Primary Investigator of the study, Dr. Susan M. Orsillo, E-mail: sorsillo@suffolk.edu, Voice: 617-3051924, or the student co-investigator, Aviva M. Katz, E-mail: amkatz@suffolk.edu, Voice: 617-840-8317. If you have questions about your rights as a research participant, you may contact Suffolk University's Institutional Review Board (IRB) at (617) 557-2006 or irb@suffolk.edu.

PARTICIPANT CONSENT:

If you have read this form completely and agree with the terms, please sign below and print today's date. By signing, you also are affirming that you are at least 18 years of age and able to sign a legal document without a guardian.

You have read the information in this consent including the risks and benefits. You have been given an opportunity to ask questions, and enough time to decide whether or not to participate. You voluntarily agree to participate in this research study.

Signature of Participant

Date

Printed Name of Participant

Signature of Person Obtaining Consent

Date

Printed Name of Person Obtaining Consent

APPENDIX F

Recordings of Study Conditions

F1. Values Articulation Manipulation

Close your eyes and relax for a few moments. Notice how your body feels in the chair and bring your attention to your breath. For the next minute, simply pay attention to your breathing, noticing how your body feels as you breathe in and out. I will let you know when the minute has ended.

(Pause – 1 minute).

As this minute comes to an end, please open your eyes.

For the next 40 minutes, you will be presented with a series of prompts and asked to do some writing about how anxiety sometimes makes it difficult for you to raise your hand, speak up, or give a presentation. You'll also be asked to think and write about how this anxiety might be getting in the way of things that are important to you, such as your education or being the kind of student you really want to be. You will also be asked to think and write about steps you might be able to take in order to make a change. Your spelling, punctuation, and grammar do not matter at all. What matters is that you honestly express your own thoughts and feelings. The only people who will read this are the researchers in this study. As you write, do your best to allow yourself to fully experience any thoughts, emotions, and physical sensations that arise.

Imagine for a moment that you are in the classroom and you are thinking about the thing you are most afraid of doing. This might be raising your hand, answering a question, or giving a presentation. What thoughts come up? In other words, what are you worrying about? What are you afraid could happen? Please begin writing now.

(Pause – 3 minutes)

Now, I would like you to reflect on how these fears may get in the way of you pursuing your education. In other words, how does your anxiety interfere with you fully engaging in your education and getting the most out of class?

As you write, you may also consider the following questions:

Has your anxiety prevented you from developing a strong relationship with professors?

Are there opportunities you have passed up?

Have you gotten worse grades in some courses because your anxiety kept you from participating? Please begin writing now about how the fears have interfered with your education for a few minutes.

Please think for a few moments about why you decided to go to college. Maybe there were family members or teachers who inspired you to prepare for college. Or maybe you

decided for yourself that it was important. Reflect for a few moments on the application process and how you felt when you found out you had been accepted. Now take a few moments to consider - How will a college education help you in the future? What sort of career do you want to have? Please begin writing now.

Now please take a moment to think about - what kind of student would you ideally like to be in order to achieve this future? In other words, how would you ideally like to behave as a student – during class, in interactions with other classmates and your professors if your anxiety or worry did not interfere? Please write about this for a few minutes.

Now that you have had the opportunity to really consider the kind of student you want to be – and to reflect on the ways that anxiety sometimes holds you back – we would like to share some information about anxiety – and different ways to cope with it - that you might find useful.

Part of being human is being able to experience the full range of emotions – including fear. Sometimes we can be critical towards ourselves when we feel certain emotions and we might try to push our emotions away. But it is important to recognize that our emotions serve a very important function. Emotions let us know that we are involved in something important and that we should pay attention.

For example, fear is often a signal that danger is present. When we are afraid, our attention becomes focused on the potentially threatening situation so that we can quickly act in our best interest. For example, fear helps us to jump out of the way if a car is speeding toward us as we cross a busy street.

But the tricky thing is that we also experience fear in response to activities that we don't want to avoid and that are not actually dangerous. Many of the activities that give our lives meaning – telling someone we care about them, trying out for a sports team, performing a recital, going on a job interview– all involve taking a risk or responding to a challenge. So naturally, situations like these elicit fear. But, here our fear is telling us that we are about to do something important....something that really matters to us. We don't need to avoid these situations – we just need to recognize that we are taking valued actions. We don't have to judge ourselves for feeling fear....we don't have to try and feel differently.....we just need to acknowledge that we are being courageous. Doing something that matters even though we feel fear and uncertainty.

Research demonstrates that the most effective way to cope with anxiety is to acknowledge when it is present and still engage in activities that are consistent with the things we care about. This means that even if anxious thoughts and feelings arise, we can still participate in activities that help connect us to our values. For example, while sitting in class, you might think “When I speak in class, everyone knows how anxious I am,” or “If I make a mistake, the professor will think I am stupid.” You might even think, “If I raise my hand and speak in class, all my classmates will think I'm stupid.” If you value learning, focusing on that value and how it might enhance your life, may help get you to raise your hand in class even when you are having anxious thoughts and feelings.

If instead, your goal is to avoid or get rid of the anxiety associated with speaking up in class, you will probably pass up the opportunity to raise your hand and participate. Or, you might try to control or suppress your anxiety before raising your hand or participating. Unfortunately, research shows that the more we try to stop ourselves from getting anxious, the more anxious we actually become. In other words, trying to force ourselves not to feel an emotion ironically makes us experience that emotion even more intensely.

So when we are faced with the opportunity to engage in an activity we value, but an activity that might make us anxious, we have a choice to make. We can try and push our anxiety away, which will probably make it worse. We can avoid the activity, which can bring relief in the short term, but may lead us away from the things that matter most to us. Or, we can engage in the valued activity, even though it is likely that some fear and anxiety will arise.

There are two specific steps we can take to make it more likely that we engage in activities we value.

1. Acknowledge our emotions when they arise, understand they are natural responses to a challenge and recognize that emotions are events that come and go, not characteristics that define us and control our behavior.
2. Focus on the ways in which the valued activity (like talking with a professor) connects us to things we care about, such as being more fully involved in our education or establishing contacts that could help our future career.

We would like you to take a few minutes and practice these two steps.

First, think about the upcoming week. Think for a moment about what opportunities might come up to take actions that would connect you to your education and the kind of student you would ideally like to be. If the action is something you typically avoid, it is likely to be one that causes anxious thoughts and feelings. See if you can clearly identify one valued action that you could realistically take this week. Please write this action down.

How would engaging in this activity connect you to your education and help you behave like the student you would ideally like to be? Please begin writing now.

Now I am going to ask you to do an imagery exercise to demonstrate how you might acknowledge and allow your public speaking fears when they arise in a way that might help you take some valued actions. Please close your eyes and notice the way you are sitting in the chair. Notice where your body is touching the chair. Begin to bring your attention to your breath. Notice how the air enters your body, where it travels, and how it leaves your body. Notice the parts of your body that move as you breathe. Gently let your awareness rest on the place where you feel your breath. (*Pause*). Each time your mind wanders, simply notice that, and gently bring your attention back to your breath. Now try

to be aware of any thoughts, feelings, or physical sensations you are experiencing right now. Just notice these experiences and ask yourself to bring curiosity and compassion to them.

Now imagine being in the place where you would actually do the valued activity you wrote about a few moments ago, the activity that would connect you to your education and help you behave like the student you would ideally like to be. Perhaps you are in a classroom, a lecture hall, a professor's office, a library, or somewhere else (*pause*). Imagine preparing yourself to engage in the activity. Notice the thoughts that come up. Observe each thought as an event, allowing it to come in and then go out of your mind (*pause*). Also notice any anxious feelings that come up. Notice how your body feels as you imagine engaging in this valued activity. Try to notice where you feel certain sensations, such as tense muscles, sweating, or an accelerated heart rate. Imagine breathing calmly into the specific areas where you are noticing these sensations. You can say to yourself, this is how it is right now, let me be open to it. As you take each calm breath, say to yourself, this is how it is right now, let me be open to it. Take a few more breaths as you continue imagining doing the valued activity (*pause*).

Now, gently bring your attention back to the room and open your eyes when you are ready.

This week, as opportunities come up for you to engage in that valued activity you wrote about, I would like you to think about this experience today and consider using the strategies you've learned here.

In a moment, the experimenter will enter the room. Please use the walkie talkie now to let the experimenter know you have reached the end of the experiment.

F2. Cognitive Restructuring Manipulation

Close your eyes and relax for a few moments. Notice if there is any tension in your body. See if you can let go of that tension and relax your muscles. For the next minute, each time you exhale, see if you can relax your muscles a bit more. I will let you know when the minute has ended.

(Pause – 1 minute).

As this minute comes to an end, please open your eyes.

For the next 40 minutes, you will be presented with a series of prompts and asked to do some writing about how anxiety sometimes makes it difficult for you to raise your hand, speak up, or give a presentation. You'll be asked to think and write about how this anxiety affects your behavior. You will also be asked to think and write about steps you might be able to take in order to make a change. Your spelling, punctuation, and grammar do not matter at all. What matters is that you honestly express your own thoughts and feelings. The only people who will read this are the researchers in this study.

Imagine that you are in the classroom and you are thinking about the thing you are most afraid of doing. This might be raising your hand, answering a question, or giving a presentation. What thoughts come up? In other words, what are you worrying about? What are you afraid could happen? Please begin writing now.

(Pause – 3 minutes)

Part of being human is being able to experience the full range of emotions – including fear. Sometimes we can be critical of ourselves when we feel certain emotions and we might try to push our emotions away. But it is important to recognize that our emotions serve a very important function. Emotions give us messages about our behavior and the world around us.

For example, fear is often a signal that danger is present. When we are afraid, our attention becomes focused on the potentially threatening situation so that we can quickly act in our best interest. For example, fear helps us jump out of the way if a car is speeding toward us as we cross a busy street.

But the tricky thing is that sometimes we learn to fear and avoid activities that are not actually dangerous like – telling someone we care about them, trying out for a sports team, performing a recital, or going on a job interview. The good news is that we can learn new ways of responding to feared situations that are not actually dangerous. These strategies can help us to reduce our fear and anxiety and approach situations we used to avoid.

When people worry about a situation that they fear, they often experience automatic negative thoughts. Automatic negative thoughts are typically distorted or irrational thoughts about oneself, the world, or the future. These thoughts impact how we perceive different situations and they influence our emotions and our behavior. Sometimes we are aware of these thoughts, but other times, we do not even notice them occurring. For example, someone might have the automatic thought “When I speak in class, everyone knows how anxious I am,” or “If I make a mistake, the professor will think I am stupid.” These thoughts can elicit strong feelings of fear and anxiety and also impact our behavior. Specifically, someone with these sorts of automatic thoughts is likely to avoid raising his or her hand. And although this avoidance makes us feel better in the short term, as it decreases our immediate anxiety, in the longer term it can increase our fear and avoidance.

Imagine that you are in the classroom, thinking about the thing you are most afraid of doing. What are your automatic negative thoughts? In other words, what negative thoughts come up about yourself, the world or what will happen in the future? Please list these thoughts now.

Research demonstrates that one effective way to cope with fear and avoidance of activities that are not dangerous is to use a skill called cognitive restructuring. Cognitive restructuring involves becoming more aware of, and changing, your automatic negative thoughts. By becoming aware of these thoughts, you can then evaluate them, challenge them and develop a more balanced set of beliefs about yourself, the world, and the future. For example, if one of your automatic thoughts is, “If I raise my hand and speak in class, all my classmates will think I’m stupid,” you might challenge this thought by asking yourself, what evidence do I have that this is true? How many times have I spoken and received a negative response? What evidence do I have that the opposite is true? How many times have I spoken and received a positive response? Am I 100% sure that this is true? Is it really possible for me to know what everyone in class is thinking? Challenging the thought helps you come up with a more balanced thought. You might change your thought to “If I speak in class, I could get a positive response, a negative response, or no response at all from classmates.” This thought will likely decrease anxiety and make it easier to speak in class.

The other thing we know about anxiety is that facing, instead of avoiding, the things we fear eventually reduces anxiety. The more you try things like raising your hand in class or talking to a professor the easier they get. Both repeated exposure to feared activities, and staying in a feared situation, can reduce fear and anxiety over time.

So there are a few steps we can take to decrease our anxiety and approach previously feared situations.

1. Identify and challenge the negative automatic thoughts that are contributing to our fear. This can make it easier to approach feared situations.
2. Repeatedly approach feared situations and/or stay in a feared situation until the fear begins to decrease so that we learn there is actually no danger present.

Now please take a moment to imagine yourself in a class-related activity that makes your nervous. For example, imagine that you are sitting in class and you really want to ask a question, but you are anxious. Or perhaps the professor has asked a question of the class and no one is volunteering an answer. Take a few moments and see if you can vividly imagine one of these situations. Pay attention to the thoughts that arise, as well as the emotions, and any urges to engage in a particular behavior (like leaving the room or avoiding eye contact).

Now see if you can identify 3-4 thoughts that you had that could be considered automatic negative thoughts. Please write them down now.

Now look at the first thought you identified and see if you can answer the following questions:

What evidence do I have that this thought is true?

What evidence do I have that the opposite is true?

Am I 100% certain that this thought is true?

Is this thought a fact or something I believe?

(Pause)

See if you can challenge the thought and change it into a more balanced statement.

Please write that statement here.

Now choose the second thought and see if you can answer the following questions:

What evidence do I have that this thought is true?

What evidence do I have that the opposite is true?

Am I 100% certain that this thought is true?

Is this thought a fact or something I believe?

See if you can challenge the thought and change it into a more balanced statement.

Please write that statement here.

Now, one last time, consider another automatic negative thought that you identified and see if you can answer the following questions:

What evidence do I have that this thought is true?

What evidence do I have that the opposite is true?

Am I 100% certain that this thought is true?

Is this thought a fact or something I believe?

See if you can challenge the thought and change it into a more balanced statement.

Please write that statement here.

Please think about the upcoming week. What are some situations when you think automatic negative thoughts will come up? Please list these situations here.

As you go through the upcoming week, and these situations and their associated automatic negative thoughts come up, I'd like you to think about this experience and to consider using the strategies you've learned here.

In a moment, the experimenter will enter the room. Please use the walkie talkie now to let the experimenter know you have reached the end of the experiment.

F3. Neutral Manipulation

Close your eyes and relax for a few moments. Notice if there is any tension in your body. See if you can let go of that tension and relax your muscles. For the next minute, each time you exhale, see if you can relax your muscles a bit more. I will let you know when the minute has ended.

(Pause – 1 minute).

As this minute comes to an end, please open your eyes.

For the next 40 minutes, you will be presented with a series of prompts and asked to do some thinking and writing about a variety of topics. Your spelling, punctuation, and grammar do not matter at all. What matters is that you honestly express your own thoughts and feelings. The only people who will read this are the researchers in this study.

Imagine that you are in the classroom and you are thinking about the thing you are most afraid of doing. This might be raising your hand, answering a question, or giving a presentation. What thoughts come up? In other words, what are you worrying about? What are you afraid could happen? Please write about this for the next few minutes.

(3 minutes)

Part of being human is being able to experience the full range of emotions – including fear. Emotions give us important messages about ourselves and the world. For example, fear is often a signal that danger is present. When we are afraid, our attention becomes focused on the potentially threatening situation so that we can quickly act in our best interest.

Research demonstrates that our resources for paying attention are limited. In other words, we can only pay attention to a limited number of things at any one time. When we experience fear and feel anxious, our attention narrows and focuses only on threatening or potentially dangerous cues. For example, if you were walking down the street with a friend, listening to her telling you a story, and you noticed a car racing towards you, your attention would narrow and focus on the sights and sounds of the car speeding toward you on the street. It would be very unlikely that you would notice or remember what your friend was saying during those moments. Instead, your focus would be on monitoring the threat and taking actions to stay safe.

The tricky thing is that external dangers are not the only cues that trigger this process of our attention narrowing. If we start to feel anxious in the presence of cues that are not particularly dangerous – such as raising our hand to speak in class or giving a presentation – those anxious feelings can also cause our attention to narrow. So, for

example, if you are standing in front of the class, giving your presentation, your attention might be focused on the slight trembling in your hand or the dryness in your mouth or the one student in the back who seems to be sleeping. You might completely miss the encouraging nod of your classmates or the look of interest on your professor's face. And when our attention is limited to those kinds of cues, we are much more likely to become even more anxious.

One effective way to cope with this process is to learn to focus our attention on other things when we become anxious. This way, we can use our limited capacity for attention in a positive way. If we can train ourselves to focus on neutral events or experiences when we are in an anxiety-provoking situation, we will have a limited capacity to notice our own anxiety, and our anxiety will be reduced.

So there are a few steps we can take to decrease our anxiety and approach previously feared situations.

1. Notice when we are starting to become anxious.
2. Engage in distraction techniques that will focus our attention on neutral topics and away from our own anxiety and/or cues in the environment that make us feel anxious.

Now please take a moment to imagine yourself in a class-related activity that makes you nervous. For example, imagine that you are sitting in class and you really want to ask a question, but you are anxious. Or perhaps the professor has asked a question of the class and no one is volunteering an answer. Take a few moments and see if you can vividly imagine one of these situations. (Pause). Pay attention to where your attention is focused – notice whether your attention is drawn to cues in the classroom, or if your attention is focused on your thoughts, emotions, and any urges to engage in a particular behavior (like leaving the room or avoiding eye contact).

For the next twenty minutes, I'm going to ask you to practice engaging in some activities that might help you to distract yourself from anxiety. First, I'd like you to spend some time writing about the contents of your closet. Imagine that your goal is to create as detailed an inventory as you can. Try to name and describe as many items in your closet as you can – including details such as color, size, texture and location. It is important that you really immerse yourself in this activity – even if you find it boring. When you are attending to things that you find boring, it is impossible to also feel anxious! Please write for the entire time until I tell you to stop. If you can't think of what to write next, simply write the same thing again and again until you think of something new.

You may now begin writing about the contents of your closet.

(Pause – 8 minutes)

Please stop writing about your closet. Now I'd like you to close your eyes for a moment and imagine that you are in your bedroom. (Pause). Notice how your feet feel on the

floor, perhaps it is soft carpet or hardwood floor. Notice the color and texture of the ceiling above you as well as the color and texture of the walls. Picture where any windows are placed in the room and imagine what you might see outside of them. Now begin to notice items that are in the room, starting with your bed. Notice the color and details of your bedding – the sheets, pillow cases, and comforter. If you were to reach out and touch the bedding, what would its texture be? Now imagine the other items in your bedroom. Perhaps you have a desk, piled high with books and papers. Perhaps you have a chair in your room. Notice its color and details. Perhaps there are items in the room that hold special meaning for you. Notice their size, shape, and color. (Pause).

You may now open your eyes and write about what you have noticed in your bedroom – the floor, the ceiling, the walls, the windows, your bed and all of the other items you noticed in your room. Imagine again that your goal is to create as detailed an inventory as possible of the contents of your bedroom. Try to name and describe as many items as you can – including details such as color, size, texture, and location. Once again, it is important that you really immerse yourself in this activity, even if you find it boring. When you are attending to things that you find boring, it is impossible to also feel anxious! Please write for the entire time until I tell you to stop. If you can't think of what to write next, simply write the same thing again and again until you think of something new.

You may now begin writing about the contents of your bedroom.

(Pause – 8 minutes)

As you go through the upcoming week, and notice when anxiety comes up, I'd like you to think about this experience and to consider using the strategies you've learned here.

In a moment, the experimenter will enter the room. Please use the walkie talkie now to let the experimenter know you have reached the end of the experiment.

APPENDIX G
Manipulation Check Quiz

Please answer the following questions based on your understanding of the description you just heard on the audio recording.

1. According to the directions in the audio recording, during the next week, if I experience unpleasant feelings or emotions, I should:
 - a. Try to change them by challenging their validity
 - b. Try to distract myself from the feelings by focusing on something else
 - c. Tell myself that it will be over soon
 - d. Acknowledge my reactions, bring compassion to myself for having them, accept them, and let them be
2. According to the directions in the audio recording, the next time I feel anxious about public speaking, I should:
 - a. Get in control of my feelings by pushing the bad feelings away
 - b. Accept my emotions with compassion
 - c. Examine and challenge the negative thoughts associated with the uncomfortable feeling
 - d. Distract myself by thinking about something else
3. According to the directions in the audio recording, the best way to respond to unpleasant thoughts is to:
 - a. Examine the evidence supporting the thought and form a balanced response
 - b. Turn on the TV or some music to get your mind off of whatever is bothering me
 - c. Talk to a friend about it
 - d. Observe the thought or feeling without judging it; simply recognize it
4. How well do you think you understood the material that was presented to you?
 - a. Not well
 - b. Somewhat well
 - c. Very well
 - d. Extremely well

5. How alert and attentive were you while you were listening to the audiotape?
 - a. Not at all alert
 - b. Somewhat alert
 - c. Very alert
 - d. Extremely alert
6. How similar were the concepts to how you usually respond to difficult thoughts and feelings?
 - a. Not at all similar
 - b. Somewhat similar
 - c. Very similar
 - d. Extremely similar
7. How helpful do you think this advice will be for you when you experience anxious thoughts or feelings about public speaking?
 - a. Not at all helpful
 - b. Somewhat helpful
 - c. Very helpful
 - d. Extremely helpful

APPENDIX H

Exposure Script

Thank you so much for being in this study. Could you maybe help us out with something? There's an intro psych class going on now in 638B and we're trying to get some more people to participate in this study. Sometimes students are more open to considering a research study when they hear about it from another student. If the professor says it's ok, would you be willing to spend a few minutes describing your experience in the study to the class and maybe answer a few questions? I would introduce you to the class and then you could just talk about what you had to do, how long it took, and maybe what you thought of the whole thing. Would you be willing to do that?

Record participant's answer: Yes / No

If participant says no: Okay, thank you very much.

If participant says yes:

The professor may or we may not have time for you to come in – let me go check.

(Experimenter leaves the room for 30 seconds).

(Experimenter re-enters the room).

Looks like we don't need you after all. Thank you very much for considering it.

APPENDIX I

Debriefing

II. Debriefing upon completion of Time 1 and Time 2

Thank you for taking part in this study. The main purpose of this study was to learn about public speaking anxiety, a form of social anxiety, in college students and the efficacy of interventions designed to manage that anxiety utilizing different skills. We believe that studies like this can provide researchers and clinicians with information about the treatment of anxiety. We also believe that studies like this may teach participants skills to manage their anxiety.

Many college students struggle with public speaking anxiety and other forms of social anxiety. The college counseling center, which offers free services to current students, is an excellent resource for more information, or to receive help.

Counseling Center
73 Tremont Street, 5th Floor
<http://www.suffolk.edu/offices/989.html>
Tel: 617-573-8226

For more information about anxiety disorders, the National Institute of Mental Health has a helpful website that provides scientifically based information to further understanding and treatment of psychological problems. Their website is <http://www.nimh.nih.gov/health/topics/anxiety-disorders/index.shtml>. The Anxiety and Depression Association of America (<http://www.adaa.org>) is an outstanding online support resource for understanding and finding help with various anxiety disorders. The Center for Anxiety and Related Disorders is an excellent resource here in Boston for individual and group therapy related to public speaking anxiety: <http://www.bu.edu/card/>

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I2. Debriefing at close of entire study (email message)

Dear Participant,

Thank you for taking part in the research study, An Investigation of Fears Related to Public Speaking. As we told you at the conclusion of your participation in this study, the main purpose was to learn about the efficacy of interventions designed to help with public speaking anxiety.

Now that we are no longer enrolling participants in the study, we wanted to let you know that deception was involved in two aspects of the study. First, when you were asked about your willingness to give an impromptu speech to a group of students, no participant in the study was actually chosen to do this, because there was not actually a group of students. Instead of asking participants to engage in this anxiety-provoking activity, we were just interested in your willingness to do so. Second, if you participated in the distraction condition of the study, this is not an empirically supported treatment for public speaking anxiety. While it is possible that your anxiety may have lessened during the distraction, it is not currently a treatment that research indicates is helpful in treating public speaking anxiety for longer term benefits. If either of these forms of deception caused you any discomfort or anxiety, please check out some of the resources below and/or feel free to contact one of the study researchers.

Many college students struggle with public speaking anxiety and other forms of social anxiety. The college counseling center, which offers free services to current students, is an excellent resource for more information, or to receive help.

Counseling Center
73 Tremont Street, 5th Floor
<http://www.suffolk.edu/offices/989.html>
Tel: 617-573-8226

For more information about anxiety disorders, the National Institute of Mental Health has a helpful website that provides scientifically based information to further understanding and treatment of psychological problems. Their website is <http://www.nimh.nih.gov/health/topics/anxiety-disorders/index.shtml>. The Anxiety and Depression Association of America (<http://www.adaa.org>) is an outstanding online support resource for understanding and finding help with various anxiety disorders. The Center for Anxiety and Related Disorders is an excellent resource here in Boston for individual and group therapy related to public speaking anxiety: <http://www.bu.edu/card/>

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APPENDIX J

Tables

Table 1. Means, Standard Deviations, and Ranges by Completion Status (N = 65)

	Completers (n = 28)		Non-Completers (n = 37)		<i>t</i> / χ^2	<i>p</i>
	<i>M</i> (<i>SD</i>)	Range	<i>M</i> (<i>SD</i>)	Range		
Sex (% Female)	89.7%	--	68.1%	--	3.33	.068
Age	19.93 (1.36)	18 -23	20.05 (4.26)	18-44	1.50	.881
Race (%)		--		--		
White	53.6%		73.0%		1.78	.181
Black	7.1%		5.4%		--	
Asian	17.9%		8.1%		--	
PRCS	22.68 (3.40)	16-27	20.62 (3.09)	2-27	2.5	.013
SPAI SP	30.70(14.11)	5-64	30.03(11.77)	6-59	.21	eta ² = .09 .835
SPAI Ag	6.61(5.01)	0-21	6.16(5.43)	0-21	.34	.737
SPAI Diff	24.11(11.89)	4-53	23.86(10.42)	4-45	.09	.930
AVAQ	3.64(.74)	2.2-5	3.49 (.76)	2-5	.78	.437
WQ	4.25(2.07)	1-9	4.18(1.87)	1.4-8.8	.14	.893
SPSB	2.95 (1.85)	1-7	3.04 (1.75)	1-7	.21	.834
AAQ	22.15(9.20)	7-45	19.04(9.29)	7-42	1.23	.228

Note. PRCS – Personal Report of Confidence as a Speaker, SPAI – Social Phobia and Anxiety Inventory (SP – Social Phobia, Ag – Agoraphobia, Diff – Difference score), AVAQ – Academic Valued Action Questionnaire, WQ – Willingness Questionnaire, SPSB – Self-Report of Public Speaking Behaviors, AAQ – Acceptance and Action Questionnaire

Table 2. Means, Standard Deviations, and Ranges by Anxiety (N = 117)

	High Anxiety		Low Anxiety			
	(n = 65)		(n = 52)			
	M (SD)	Range	M (SD)	Range	t / χ^2	p
% Female	84.6%	--	61.5%	--	6.90	.009
Age	20.0 (3.32)	18 -44	20.31(2.57)	18-30	.56	.579
Race (%)		--		--	.012	.913
White	63.1%		67.3%		--	
Black	6.2%		5.8%		--	
Asian	13.8%		7.7%		--	
PRCS	21.51 (3.36)	16-27	10.37(4.12)	2-15	-16.12	.000
SPAI SP	30.3(12.71)	5-64	21.12(9.93)	0-44	-4.18	eta ² = .69 .000
SPAI Ag	6.35(5.22)	0-21	5.17(5.26)	0-17	-1.21	eta ² = .13 .228
SPAI Diff	23.97(10.97)	4-53	16.14(8.08)	0-32	-4.37	.000
AVAQ	3.56(0.75)	2-5	3.86(.75)	2.4-5	2.16	eta ² = .14 .033
WQ	4.21(1.95)	1-9	5.91(1.88)	1.8-9	4.70	eta ² = .16 .000
SPSB	3.00 (1.78)	1-7	4.27 (1.96)	1-7	3.67	eta ² = .16 .000
AAQ	20.68(9.85)	7-45	18.73(8.75)	7-40	-1.10	eta ² = .10 .273

Note. PRCS – Personal Report of Confidence as a Speaker, SPAI – Social Phobia and Anxiety Inventory (SP – Social Phobia, Ag – Agoraphobia, Diff – Difference score), AVAQ – Academic Valued Action Questionnaire, WQ – Willingness Questionnaire, SPSB – Self-Report of Public Speaking Behaviors, AAQ – Acceptance and Action Questionnaire

Table 3. *Correlations Among Study Variables at Time 1* (N = 117)

	SPAI _SP	SPAI_ AG	SPAI_ Diff	AVAQ	WQ	SPSB	AAQ
PRCS	.52**	.26**	.47**	-.25**	.44**	.33**	.27**
SPAI_SP		.54**	.91**	-.18	.52**	.32**	.39**
SPAI_Ag			.14	-.10	-.24*	-.04	.33**
SPAI_Diff				-.16	.49**	.35**	.31**
AVAQ					.55**	.42**	-.18
WQ						.72**	-.19*
SPSB							-.06

Note. ** $p < .001$, * $p < .01$. PRCS – Personal Report of Confidence as a Speaker, SPAI – Social Phobia and Anxiety Inventory (SP – Social Phobia, Ag – Agoraphobia, Diff – Difference score), AVAQ – Academic Valued Action Questionnaire, WQ – Willingness Questionnaire, SPSB – Self-Report of Public Speaking Behaviors, AAQ – Acceptance and Action Questionnaire

Table 4. *Regression Analysis Predicting Impact of Public Speaking Anxiety and Academic Values on Willingness*

Predictors	$R^2\Delta$	Beta	Partial <i>r</i>
Step 1	.20**		
PRCS		-.44**	-.44
Step 2	.21**		
PRCS		-.34**	-.39
AVAQ		-.45**	.51

Note. ** $p < .001$. PRCS – Personal Report of Confidence as a Speaker, AVAQ – Academic Valued Action Questionnaire.

APPENDIX K Figures

Figure 1. CONSORT Diagram

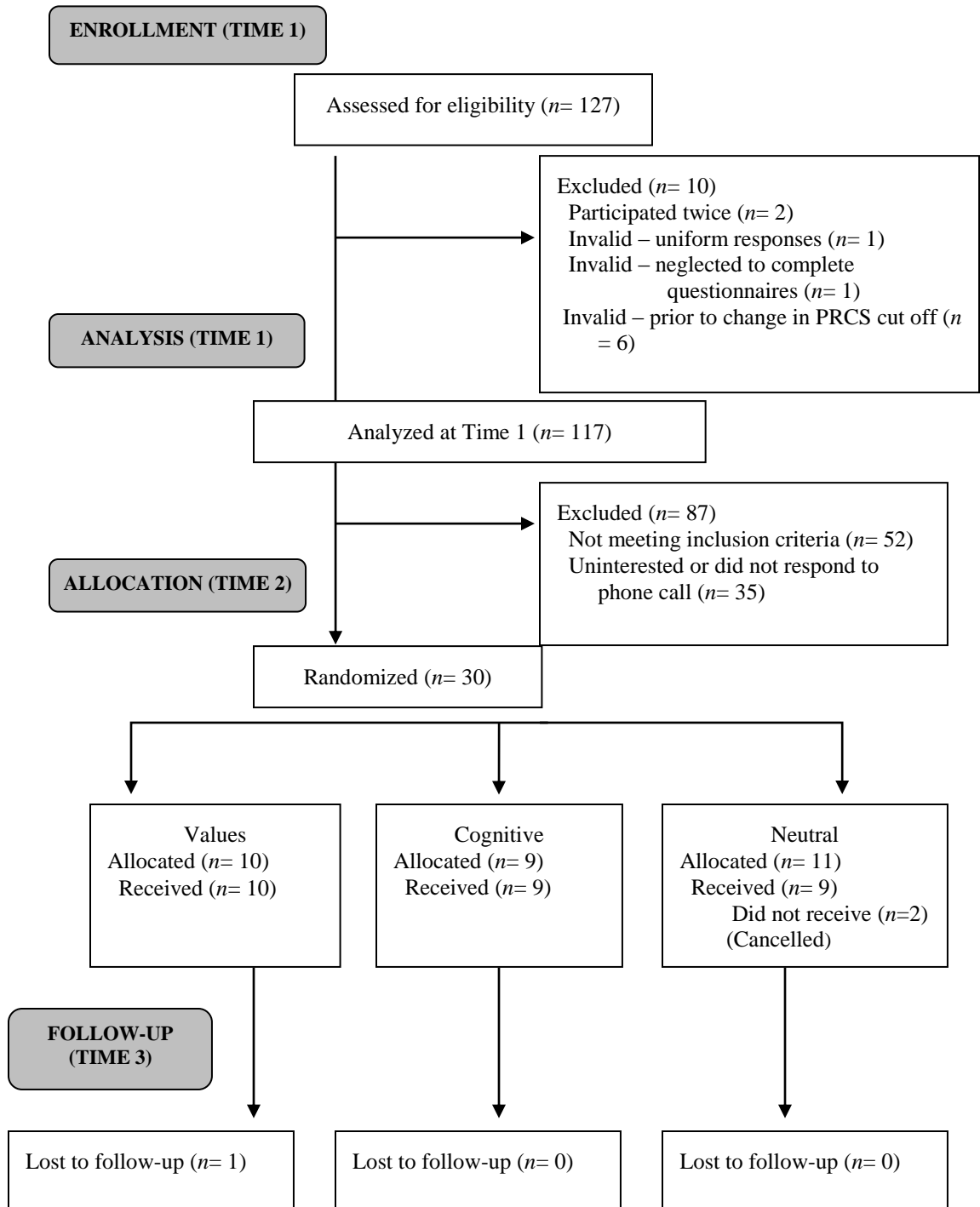
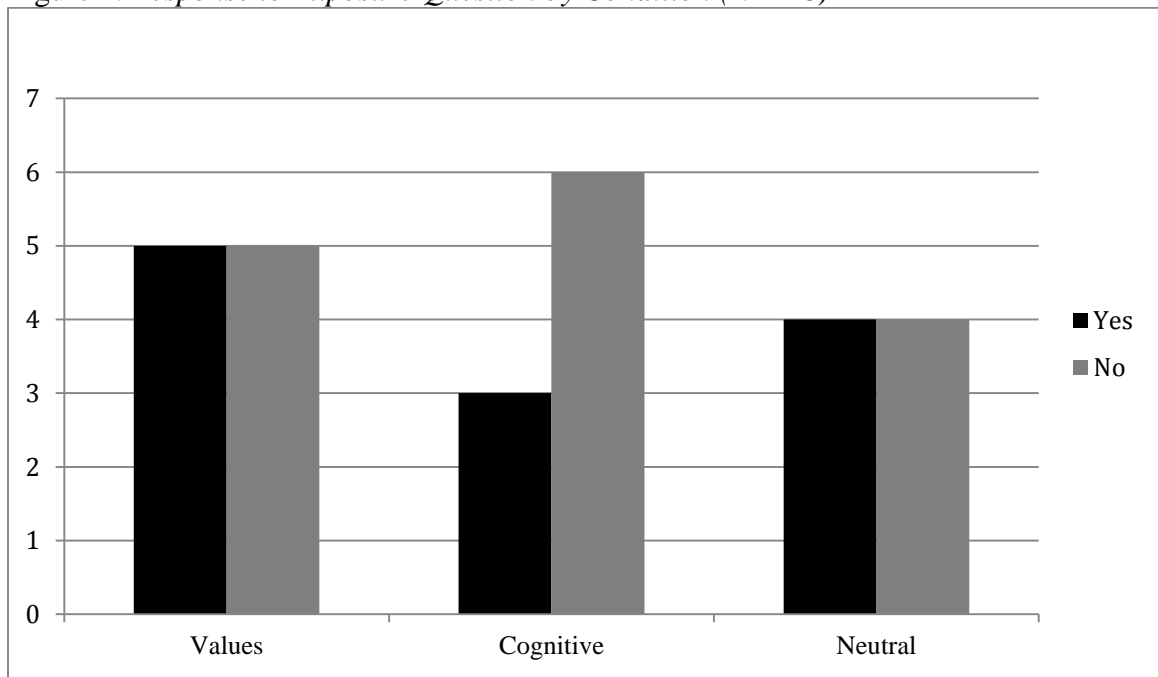
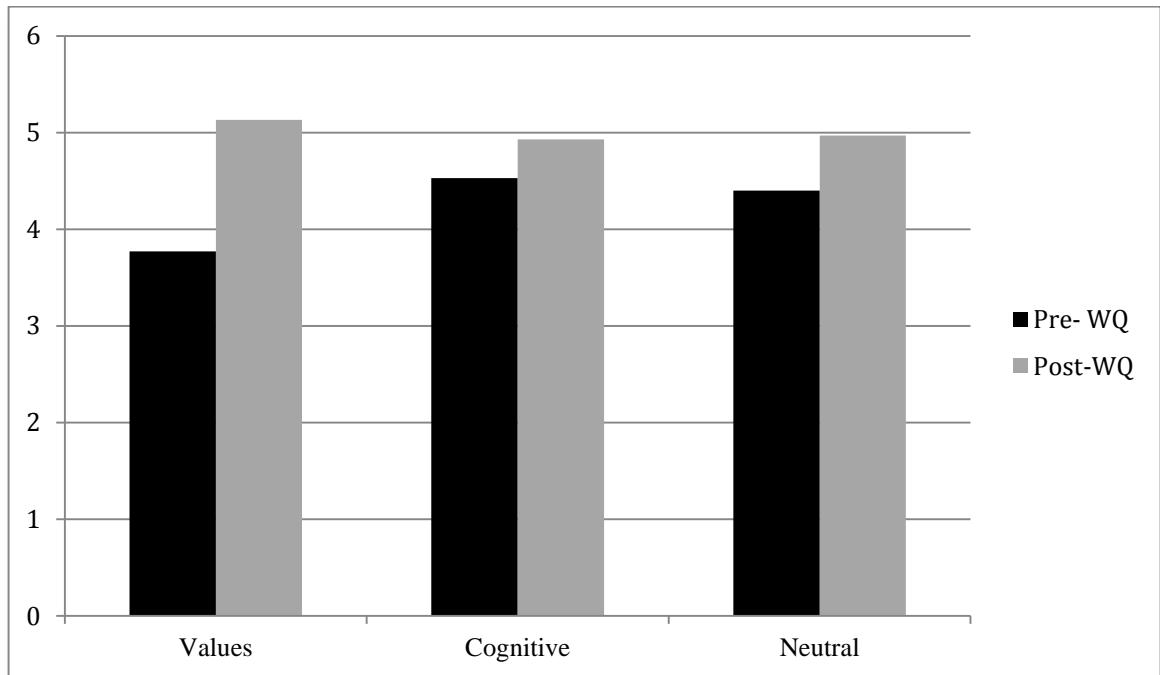


Figure 2. *Response to Exposure Question by Condition (N = 28)*



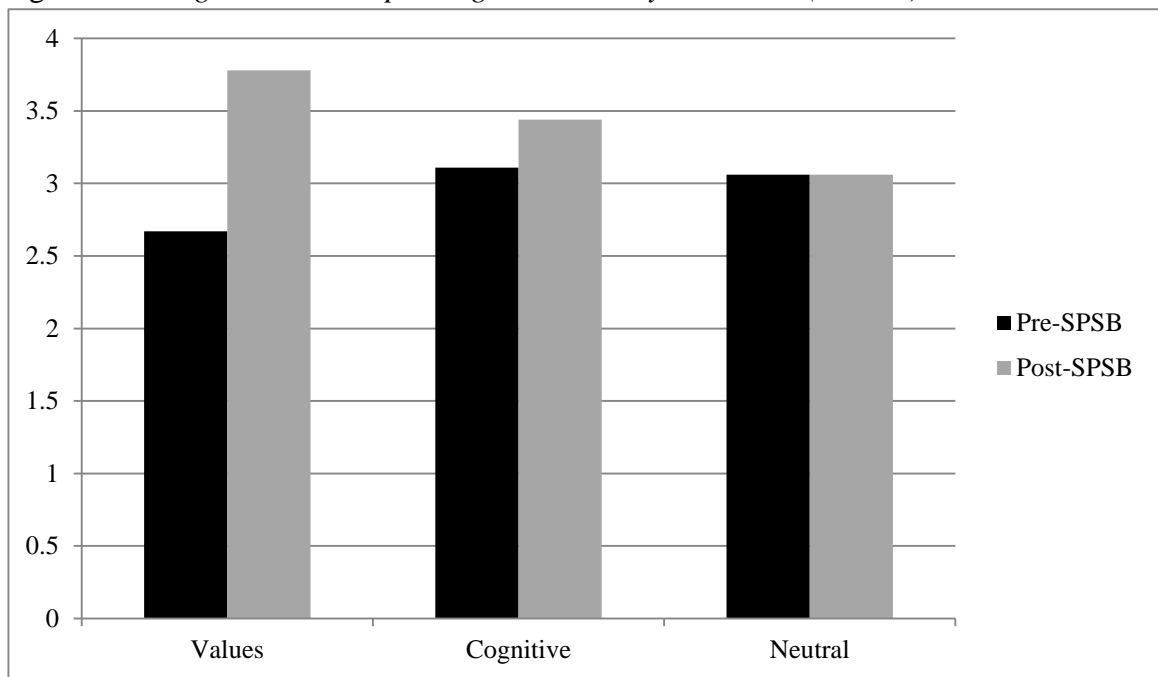
Note. One participant in the Neutral condition did not respond to the exposure question.

Figure 3. *Changes in Willingness by Condition (N = 27)*



Note. WQ = Willingness Questionnaire.

Figure 4. *Changes in Public Speaking Behaviors by Condition (N = 27)*



Note. SPSB = Self-Report of Public Speaking Behaviors.